ORDER

6360.19

PRECISION RUNWAY MONITOR (PRM)
PROJECT IMPLEMENTATION PLAN

August 30, 1994

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

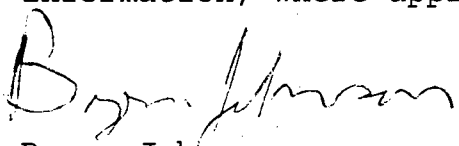
Distribution: A-W(IT/AF/AT/ND/RP/SC/SD/VS)-1; A-W(BU/FS/GC/HD/HT/OS/PO/PP)-2; A-Y(AY/DE)-3; A-Z(CW)-2; A-W(NR/NS/LM/TM/TP/TR/TZ)-3; A-X(AF/AT)-3

Initiated By: ANR-300

FOREWORD

This order describes the management structure and direction for the implementation and integration of the Precision Runway Monitor (PRM) into the National Airspace System (NAS). It defines the responsibilities of the program management in directing the field deployment of the PRM and describes the overall management functions with emphasis on the supporting roles of the related organizations of the Federal Aviation Administration (FAA) for this program.

Chapters 1 and 2 provide an overview of the PRM Program. Chapter 3 addresses PRM system requirements and describes the PRM hardware. Chapters 4 through 7 address program requirements, schedules, management responsibilities, and field deployment aspects of the system. Chapters 8 through 10 outline the test verification requirements and logistics support functions of this program. The appendices support these chapters and provide more information, where appropriate.



Byron Johnson
Program Manager for Secondary Radar

TABLE OF CONTENTS

Page No.

Page No.

CHAPTER 1. GENERAL

1. PURPOSE. This order transmits the management systems and acquisition strategy for procuring the Precision Runway Monitor (PRM) system and integrating it into the National Airspace System (NAS). This order provides the background, system description, installation schedule, and all the necessary events and functional responsibilities to install, test, and integrate the PRM into the NAS.

2. DISTRIBUTION. This order is distributed at director level to the offices of the Associate Administrators for NAS Development, Air Traffic, Aviation Standards, Airway Facilities, System Engineering and Development, Assistant Administrator for Airports, and Office of System Capacity and Requirements; division level to the offices of Chief Counsel, Human Resource Development, Training and Higher Education, Airport Planning and Programming, Budget, Aviation Policy, Plans and Management Analysis, and Flight Standards and Operational Support Services; branch level to the NAS Implementation, Air Traffic Plans and Requirements, Air Traffic Rules and Procedures, and Life Cycle Management Services, Offices of Air Traffic Program Management and Air Traffic System Management, and the Program Director for Surveillance; division level to the FAA Logistics Center and the FAA Academy at the Mike Monroney Aeronautical Center and the FAA Technical Center; branch level to regional Airway Facilities and Air Traffic divisions.

3. BACKGROUND. The FAA has the responsibility of promoting safe and timely air travel while providing a means of increasing airport capacity during reduced visibility. In order to increase airport capacity, the FAA has initiated the PRM Program. The PRM, with its increased radar surveillance accuracy and display resolution, offers significant improvement over present capabilities to allow simultaneous independent instrument approaches to parallel runways spaced less than 4,300 feet apart. In keeping with its responsibility to improve airport capacity in the NAS and increase safety to the flying public, the FAA has established the PRM Program.

4. DEFINITIONS. The abbreviations and acronyms used in this order are defined in appendix 1.

5. AUTHORITY TO CHANGE THIS ORDER. This order may be changed by the Program Manager for Secondary Radar. Requests for changes to this document should be directed to:

Program Manager for Secondary Radar, ANR-300
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

6.-19. RESERVED.

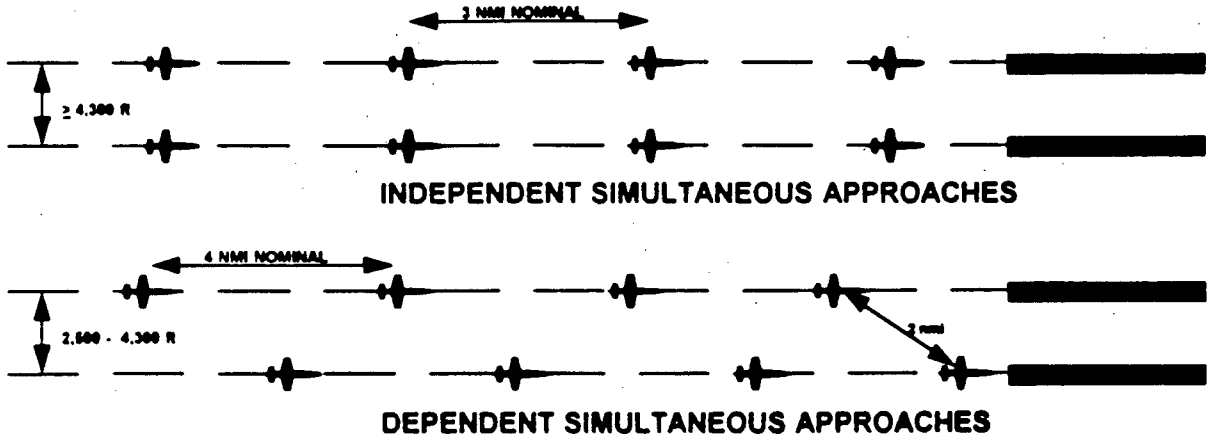
CHAPTER 2. PROJECT OVERVIEW

20. SYNOPSIS.

a. Mission. The primary mission of the PRM is to increase airport capacity by providing the capability to conduct simultaneous independent instrument approaches to parallel runways (including triple and quadruple runways) spaced less than 4,300 feet apart.

b. System Concept. For airports with parallel runways, capacity is greater when simultaneous independent approaches are conducted instead of dependent parallel approaches. Simultaneous independent approaches are when aircraft are spaced independently of other aircraft using an adjacent approach. Dependent parallel approaches are when aircraft are spaced dependent on the position of other aircraft on the adjacent approach. Figure 2-1 illustrates independent and dependent simultaneous parallel approaches.

FIGURE 2-1. INDEPENDENT AND DEPENDENT PARALLEL APPROACHES



(1) Reduced visibility during instrument meteorological conditions (IMC) forces pilots and air traffic controllers to transition from independent parallel approaches (visual separation procedures) to dependent parallel approaches (radar separation procedures) for final approach and landing operations in terminal airspace. Current separation standards allow simultaneous independent approaches to parallel runways spaced equal to or greater than 2,500 feet apart during visual conditions. However, during IMC, current separation standards only allow simultaneous independent approaches to parallel runways spaced equal to or greater than 4,300 feet apart. This means that airports with parallel runways spaced less than 4,300

feet apart must transition from simultaneous independent to simultaneous dependent parallel approaches during IMC, resulting in reduced terminal capacity, delays for scheduled airline flights and general aviation/corporate operations, and increased aircraft operating costs (particularly fuel).

(2) The PRM will increase airport capacity by allowing simultaneous independent approaches to parallel runways spaced less than 4,300 feet apart during IMC. Parallel runway separation criteria can be reduced below 4,300 feet due to the accuracies and features of the Electronic Scan (E-Scan) PRM. The E-Scan PRM system has increased azimuth accuracy (one milliradian), fast data update intervals, and high resolution display monitors. The PRM will permit increased utilization of airspace and runways during reduced visibility, and will consequently reduce delays in operations, increase airport capacity, enable fuel savings, and reduce inconvenience to passengers.

c. Acquisition Concept. A PRM engineering model with an E-Scan antenna was used in the demonstration program at Raleigh-Durham International Airport (RDU) and is being upgraded for operational use at RDU. Based on the evaluation of PRM alternatives, the demonstration program results, and Congressional direction, the PRM Program Office is procuring five limited production PRM E-Scan systems, with options for an additional three. The RDU Upgrade System is a one-of-a-kind system and will eventually be replaced by one of the limited production systems. The FAA will continue research and development (R&D) to further evaluate reductions in parallel runway separation criteria and the application of the PRM concept to triple and quadruple runway configurations. Following the R&D efforts, the FAA will evaluate the results and determine an acquisition strategy to meet any additional program requirements.

d. Contract Award. The PRM Upgrade Program and the Limited Production Program are separate contracts. The PRM Upgrade Program is a noncompetitive cost-plus contract for one E-Scan PRM system. The limited production PRM systems are procured under a noncompetitive firm-fixed-price contract. The limited production contract includes five systems with options for an additional three systems.

21. PURPOSE. The PRM system increases airport capacity by allowing simultaneous independent instrument approaches to parallel runways spaced less than 4,300 feet apart. Implementation of PRM systems will increase airport capacity, reduce delays, enable fuel savings, and reduce inconvenience to passengers.

22. HISTORY.

a. Research Activities. In 1981, the FAA initiated studies to evaluate alternatives to increase airport capacity and reduce flight delays. These studies indicated that a reduction of the runway separation criteria required for independent operation of parallel runways could increase airport capacity and reduce flight delays during IMC. To provide the surveillance capability needed to reduce the separation requirement, the FAA established the PRM Program. In 1987, the FAA began the PRM Demonstration Program. The purpose of the Demonstration Program was to develop and demonstrate technical alternatives that would provide the FAA, airlines, and other users with the information required to establish a mutually supportable criteria for future U.S. parallel runway separation.

b. Demonstration Program. The objectives of the Demonstration Program were to: (1) demonstrate the potential for runway separation reduction (less than 4,300 feet), (2) gather statistical data on aircraft deviations within the localizer beam width for analysis to determine the minimum acceptable separation, and (3) gain operational experience with a PRM system. Runway separation criteria is based on numerous factors, including the navigational error by the aircraft, data update interval to the controller, accuracy of the aircraft position data presented to the controller, and the combined controller/pilot/aircraft response time required to prevent potentially hazardous aircraft deviations on final landing approach.

c. PRM Demonstration Systems. The Demonstration Program consisted of the development and evaluation of two PRM engineering models. Both engineering models were secondary radar systems which utilize transponders carried by all commercial aircraft. These systems were (1) the E-Scan system, a beacon-based system using an electronically steered cylindrical array antenna, and (2) a Mode S monopulse beacon sensor with rotating back-to-back planar array antennas. Both systems included surveillance and display subsystems. The technical performance criteria for both PRM systems was to provide increased data update rates, increased azimuth accuracy, and improved graphics display resolution. The update interval for the Mode S back-to-back system was 2.4 seconds and the E-Scan system employed a variable update interval of 0.5 to 2.4 seconds. Both systems employed monopulse processing to achieve azimuth accuracies on the order of 1 milliradian [60 feet at 10 nautical miles (nmi)] and high resolution displays with predictive tracking. Results of the Demonstration Program indicated that both systems were

capable of supporting reduced parallel runway separation criteria from the current standard of 4,300 feet to 3,400 feet.

d. Demonstration Program Results. Results published in the *Precision Runway Monitor Demonstration Report* (February 1991) include a recommendation that a reduction in the national standard for parallel runway separation to 3,400 feet be approved under the condition that: (1) runway monitoring utilize a system achieving an azimuth accuracy of 1 milliradian or better, (2) the runway monitor system provide a track update interval of 2.4 seconds or less, and (3) the runway monitor system utilize graphics display equivalent to those used during the Demonstration Program.

e. Existing Facilities and Equipment. Runway approach monitoring is currently provided by Terminal Radar Approach Control (TRACON) facilities including Airport Surveillance Radar (ASR-4/5/6/7/8/9) systems, Air Traffic Control Beacon Interrogators (ATCBI-3/4/5) and the Automated Radar Terminal System (ARTS). These systems provide sufficient accuracy, data update interval, and display resolution to monitor independent approaches to parallel runways separated by 4,300 feet or more during IMC. To provide for the safe monitoring and control of aircraft making simultaneous independent approaches to parallel runways separated by less than 4,300 feet, improved surveillance, tracking, and display systems are required. Currently deployed systems have several inherent limitations restricting their ability to meet the goals of the PRM Program. These limitations include the following:

(1) Positional accuracy. Current ASR and secondary radar systems provide aircraft positional accuracies on the order of 0.176 degrees in azimuth. Analysis and demonstrations to date indicate that an azimuth accuracy of at least 0.06 degrees (1 milliradian) is recommended to reduce the runway separation standard.

(2) Display resolution. The display resolution of the ARTS displays is insufficient to meet the requirements for reduced runway separation criteria.

(3) Close-in surveillance. Current ASR and secondary radar systems do not provide sufficient close-in coverage of aircraft down to the airport surface. An operational requirement for a PRM system is to provide surveillance coverage along the length of the monitored runways continuous through the missed approach course down to a minimum of 50 feet above the surface of the monitored parallel runways.

(4) Data update interval. Current terminal radar systems provide data update intervals on the order of 4.8 seconds. Analyses and demonstrations indicate that data intervals of no greater than 2.4 seconds are required to reduce the runway separation standard down to 3,400 feet.

(5) Conflict prediction. Current processing in the ARTS does not include automated alert generation for actual or predicted aircraft conflicts in a parallel runway application. Operational requirements for a PRM system include the automatic generation of controller alerts based on prediction of aircraft position.

23. AUTHORIZATION. The development and acquisition of the PRM Program was promulgated in NAS-SS-1000, NAS System Specification. The PRM Program has been designated a major system acquisition (Level III), and limited production E-Scan PRM systems are being procured on a noncompetitive basis. The authorization for this project is mandated by Congress, supported by the Capital Investment Plan (CIP), NAS System Specification (NAS-SS-1000), Mission Need Statement approval and authorization for Key Decision Point (KDP)-1, Acquisition Plan approval and authorization for KDP-3B, and Program Master Plan (PMP).

24.-29. RESERVED.

CHAPTER 3. PROJECT DESCRIPTION

30. FUNCTIONAL DESCRIPTION. The PRM is a secondary surveillance radar and display system capable of providing the aircraft surveillance necessary to reduce runway separation criteria applied to the independent operation of parallel runways during IMC. The PRM utilizes an electronically steered phased-array antenna to provide variable update intervals to detect and display target aircraft. The PRM detects aircraft throughout its 360 degree coverage area and provides automatic tracking of the aircraft in operator-selected regions, nominally the parallel runway landing sector and missed approach sector. PRM controllers monitor high-resolution graphics displays for visual and aural alerts of aircraft incursions into the area between parallel runways called the "No Transgression Zone (NTZ)." During the landing phase, the PRM acquires aircraft as they enter the monitored airspace and turn onto the Instrument Landing System (ILS) final approach course. The system then automatically tracks the aircraft until the aircraft lands or conducts a missed-approach procedure. If during the entire landing sequence, one or more aircraft deviates towards an adjacent approach course, the system will automatically detect this deviation and issue an alert to the controller so that appropriate action may be taken. Automatic recognition of aircraft blunders is accomplished using track algorithms to predict each aircraft's position on approach. Two levels of alerts are generated to indicate blunder conditions. The first alert is an indication that an aircraft will enter the NTZ in a selectable NTZ penetration time. These alerts are generated when an aircraft's predicted position vector crosses into the NTZ. When this alert is generated, flightpath correction information is communicated to the deviating aircraft by the controller. The second alert indicates that an aircraft has entered the NTZ. This alert represents an immediate hazard and aircraft breakout information is communicated to the approaching aircraft using the adjacent parallel runway.

a. System Features and Characteristics. The primary features and characteristics of the PRM include the following:

(1) Operation in accordance with Order 1010.51A, U.S. National Aviation Standard for the Mark X Air Traffic Control Beacon System.

(2) Mode 3/A and Mode C interrogation and decoding.

(3) Electronically-steered antenna providing 360 degree azimuth coverage, 0-15,000 feet altitude coverage, and 32 nmi range coverage.

(4) Interrogation and tracking of 25 targets at a 1.0 second update interval while searching 360 degrees of coverage with a 4.0 second scan rate.

(5) Range accuracy of +/- 30 feet bias and monopulse processing providing azimuth accuracy of 0.06 degrees root mean square.

(6) Dual runway monitoring with display background mapping of site-specific geographical data.

(7) High resolution 20" x 20" (2048 x 2048 pixels) operational color graphics displays.

(8) Ground traffic (altitude and velocity) and adjustable coverage area filtering (geographic and altitude).

(9) Automatic blunder alert generation.

(10) Automatic correlation of tracked targets with ARTS system data, including runway assignment, aircraft identity (Mode 3/A code), flight number, aircraft type, conflict alert, and low altitude alert.

(11) A mean-time-between-critical-failures (MTBCF) of 2,190 hours.

(12) A mean-time-to-repair (MTTR) of 0.5 hours.

(13) Automatic monitoring and diagnostic capabilities to detect 98 percent of all failures and isolate 95 percent of detected failure faults down to no greater than four line replaceable units (LRU).

b. System Configuration. The PRM system is comprised of five major subsystems and auxiliary system equipment:

(1) Beacon Radar Subsystem (BRS).

(2) Radar Display Subsystem (RDS).

(3) Communications Subsystem (CS).

(4) Confidence and Performance Monitoring Subsystem (CPMS).

(5) Recording and Playback Subsystem (RPS).

A block diagram showing the functional relationships between the PRM subsystems, including site locations, is shown in figure 3-1.

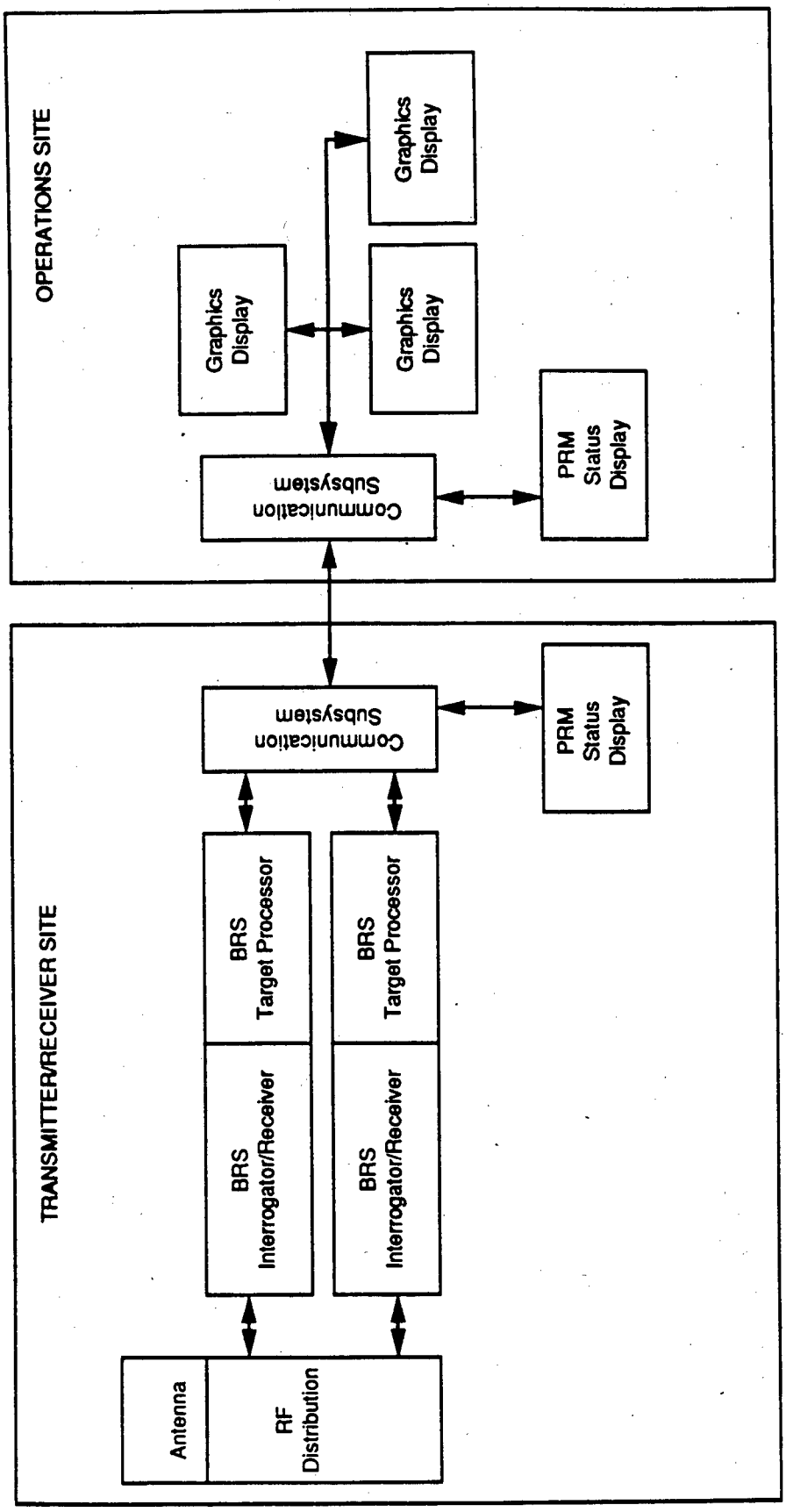


FIGURE 3-1. PRM SYSTEM BLOCK DIAGRAM

(1) The BRS provides aircraft surveillance, acquisition, and tracking. The BRS interrogates aircraft transponders, processes the replies, establishes and updates system tracks, and transmits track data to the RDS.

(2) The RDS receives target track data from the BRS, correlates the track data with ARTS data, displays track data on color graphics displays, and generates visual and aural blunder alerts, as required, based on actual and projected aircraft position data.

(3) The CS provides for intrasite data communications between the equipment located within the transmitter/receiver (T/R) site and within the operations (OPS) site. The CS also provides the intersite data communications between these two sites.

(4) The CPMS provides for the monitoring of critical system performance parameters and system faults in the BRS, the RDS, and the CS. The CPMS also provides for maintenance monitoring, including, BRS maintenance control, subsystem and environmental status monitoring, and diagnostic provisions.

(5) The RPS provides for the recording and playback of the operational data presented on the RDS.

(6) Auxiliary system equipment for the PRM system includes a shelter and tower for the operational equipment at the T/R site and a power system to provide and distribute power to the system equipment.

31. PHYSICAL DESCRIPTION. PRM equipment is located in one of two areas: the T/R site, typically located on the airport grounds, or the OPS site, located in the FAA TRACON and radar equipment room. In addition, two Parrots (ground-based beacon transponders used by the PRM system to check its range and azimuth accuracies) are installed at a remote site, typically located within 1 mile from the PRM T/R site, dependent upon siting requirements. Locations and layouts of PRM Upgrade Program equipment will be delivered as part of the PRM upgrade installation drawings being developed by the PRM Upgrade Program contractor. Locations, layouts, and descriptions of the PRM Limited Production Program equipment are provided in figures 3-2 through 3-5 and table 3-1 as follows:

a. Figure 3-2, Candidate PRM T/R Site Airport Locations. The preferred siting of the PRM T/R site is on an airport's grounds with no obstructions between the PRM antenna and the runway's approach and departure paths.

b. Figure 3-3, PRM T/R Site Perspective. This figure provides a perspective of a typical PRM T/R site. The tower height varies from 55 to 75 feet, depending upon the siting requirements.

c. Figure 3-4, PRM T/R Site Shelter Equipment Layout. This figure provides an overview of the PRM equipment layout within the contractor-provided PRM T/R Site Shelter.

d. Figure 3-5, PRM OPS Site Equipment Layout. This figure provides a sample layout of the PRM OPS site equipment within the TRACON and FAA equipment room.

e. Table 3-1, PRM Equipment Physical Description. This table provides the physical size and location of PRM equipment located in the FAA TRACON and radar equipment room. The remaining PRM equipment is located in the T/R site shelter and/or the PRM antenna tower.

FIGURE 3-2. CANDIDATE PRM T/R SITE AIRPORT LOCATIONS

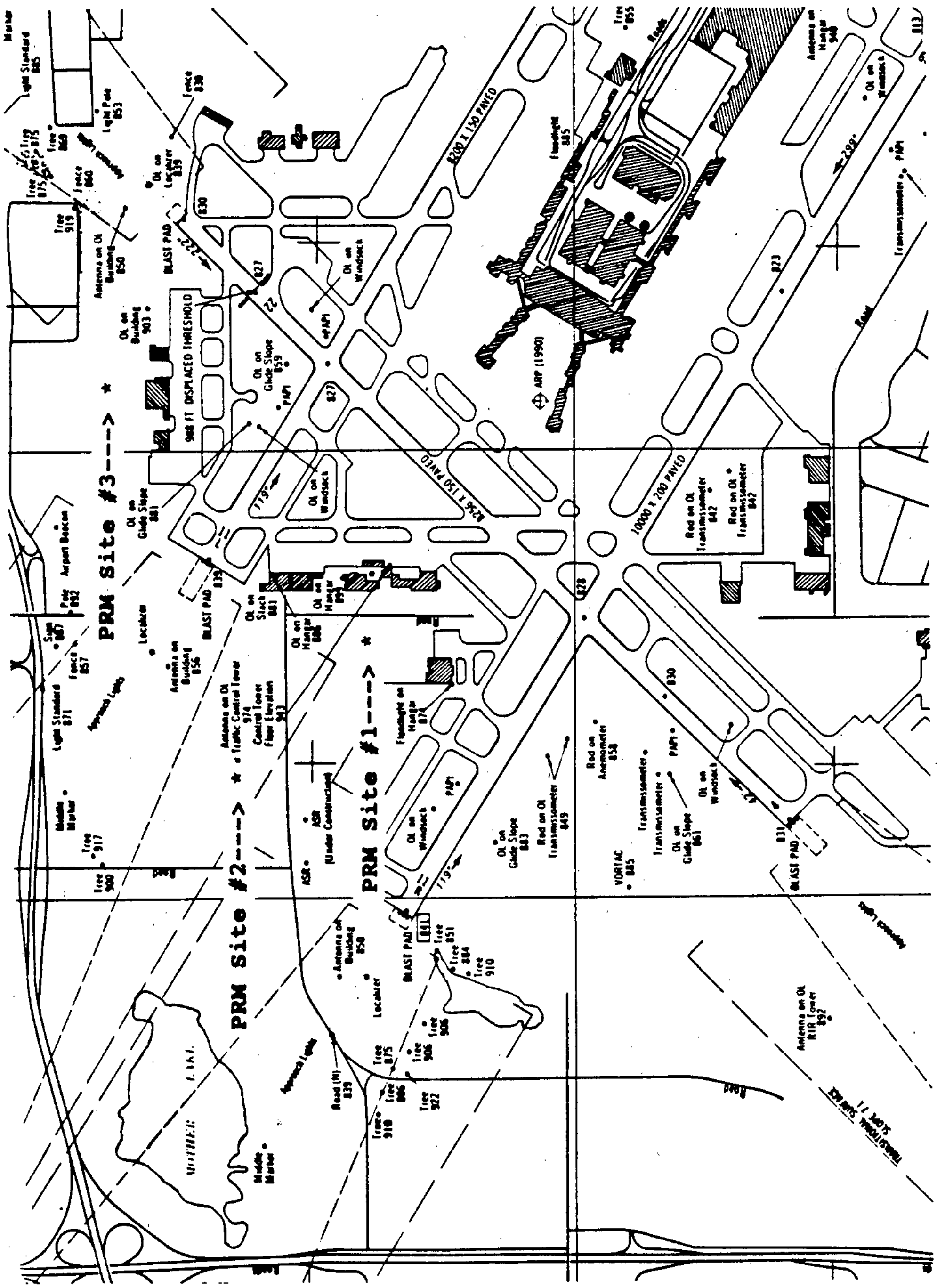
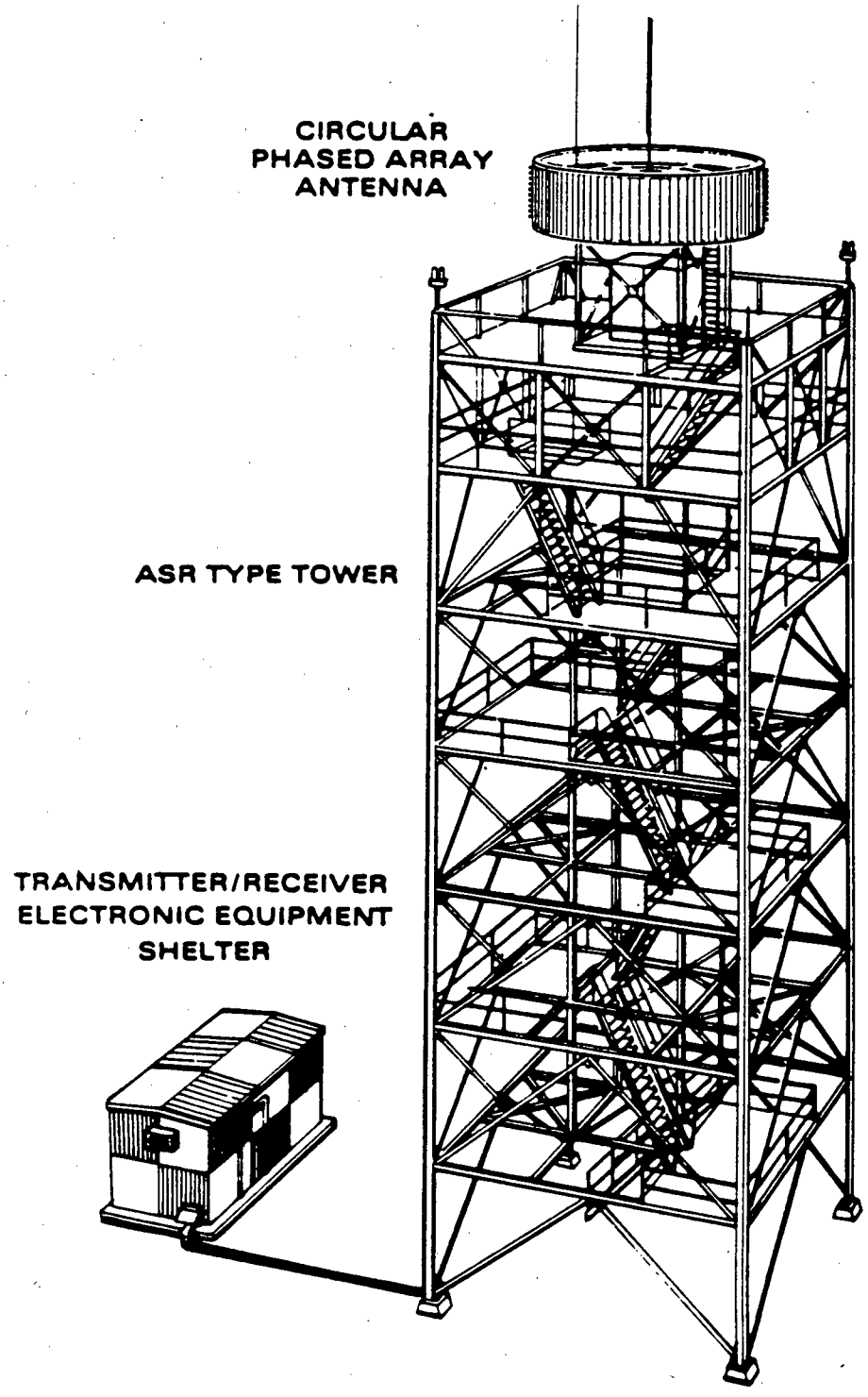


FIGURE 3-3. PRM T/R SITE PERSPECTIVE



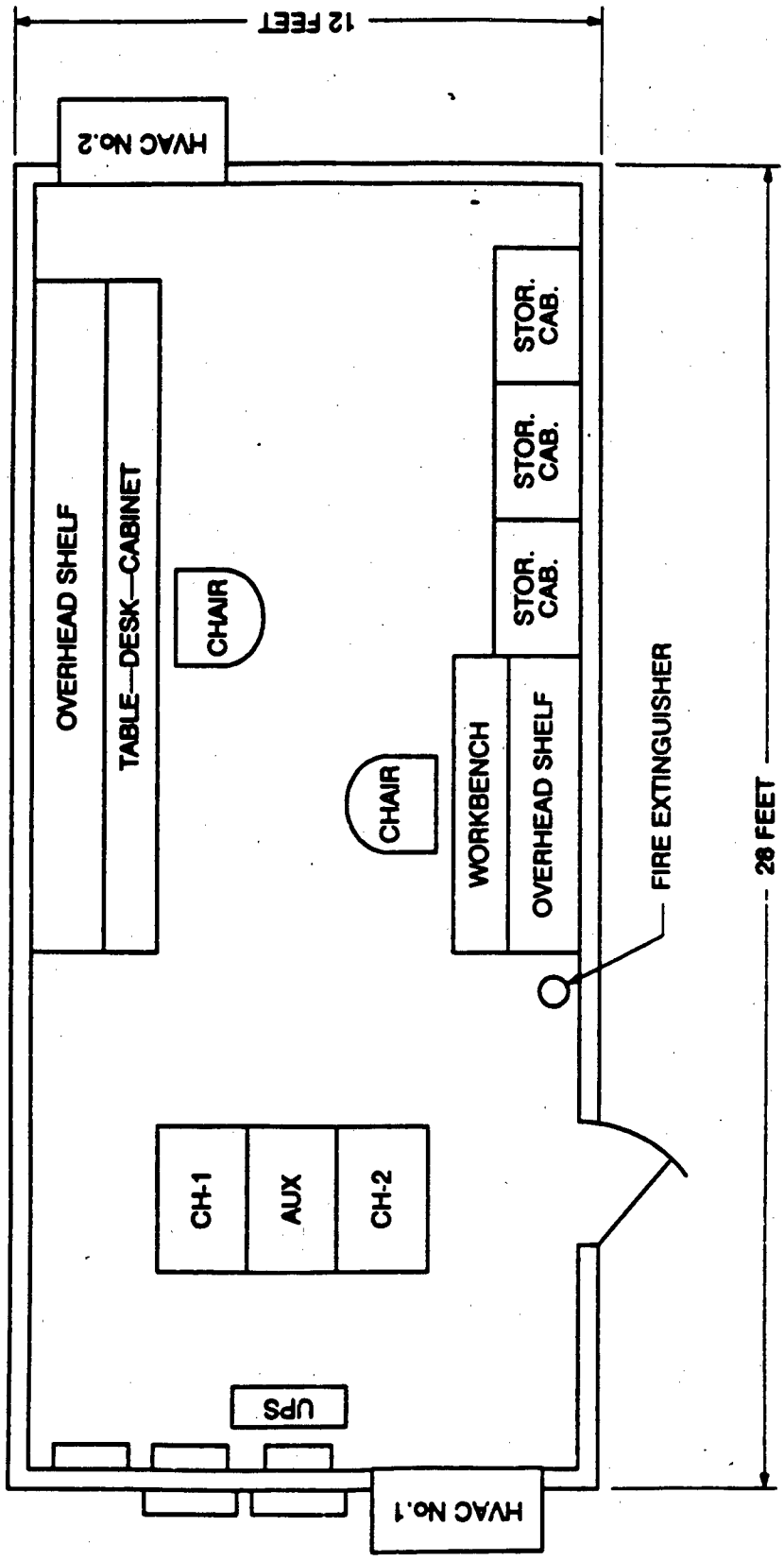


FIGURE 3-4. PRM T/R SITE SHELTER EQUIPMENT LAYOUT

FIGURE 3-5. PRM OPS SITE EQUIPMENT LAYOUT

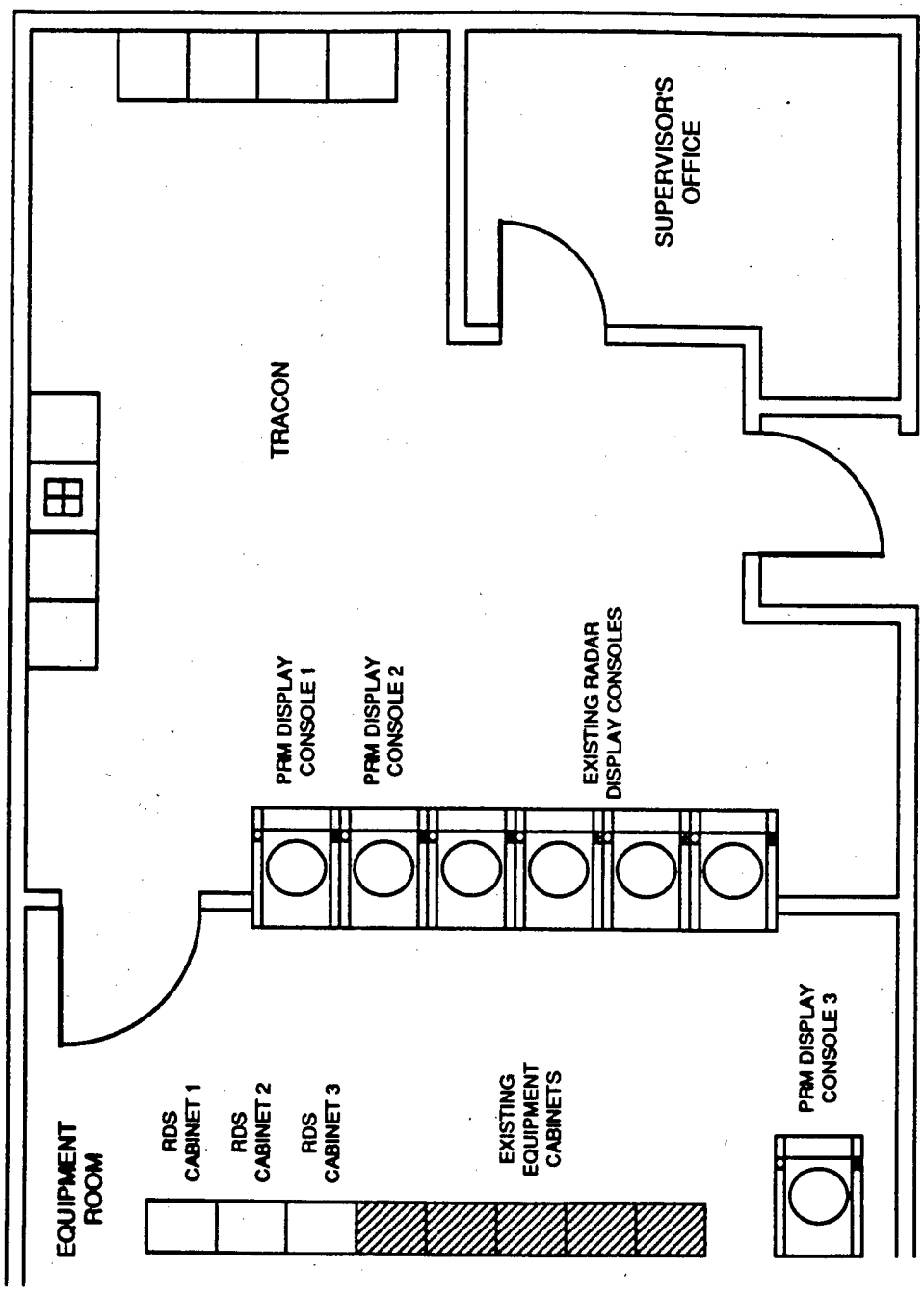


TABLE 3-1. PRM EQUIPMENT PHYSICAL DESCRIPTION

LOCATION	EQUIPMENT	WIDTH	DEPTH	HEIGHT	WEIGHT (max)
T/R Site	Antenna Tower	24.0 ft	24.0 ft	Note 1	Not Applicable
	Antenna	17.0 ft in diameter		5.0 ft	Not Applicable
	RF Distribution Unit	49.3"	38.5"	61.5"	2000.0 lbs
	T/R Site Shelter	28.0 ft	12.0 ft	8.0 ft	Not Applicable
T/R Site Shelter	Channel 1 Cabinet	21.0"	31.9"	80.0"	652.0 lbs
	Channel 2 Cabinet	21.0"	31.9"	80.0"	652.0 lbs
	Auxiliary Cabinet	21.0"	31.9"	80.0"	652.0 lbs
	PSD (Note 2)	19.0"	22.0"	21.0"	40.0 lbs
	PSD Printer (Note 2)	18.0"	12.0"	16.0"	12.0 lbs
	UPS	11.5"	32.0"	31.0"	495.0 lbs
	HVAC No. 1	65.0"	40.0"	24.0"	580.0 lbs
	HVAC No. 2	65.0"	40.0"	24.0"	580.0 lbs
FAA Radar Equipment Room	RDS Cabinet 1	21.0"	31.9"	80.0"	785.0 lbs
	RDS Cabinet 2	21.0"	31.9"	80.0"	785.0 lbs
	RDS Cabinet 3	21.0"	31.9"	80.0"	677.0 lbs
	PSD (Note 2)	19.0"	22.0"	21.0"	40.0 lbs
	PSD Printer (Note 2)	18.0"	12.0"	16.0"	12.0 lbs
	RPS Printer (Note 2)	18.0"	12.0"	16.0"	12.0 lbs
	UPS	32.0"	32.0"	45.7"	1400.0 lbs
	Display Console 3	30.0"	56.0"	48.0"	980.0 lbs
TRACON	Display Console 1	30.0"	56.0"	48.0"	980.0 lbs
	Display Console 2	30.0"	56.0"	48.0"	980.0 lbs
Remote Site	Parrot	24.0"	12.0"	30.0"	100.0 lbs
	Parrot Antenna	34.82"	42.5"	29.82"	50.0 lbs

Note 1: Antenna tower heights are dependent upon T/R siting requirements.
Note 2: The PRM Status Display (PSD) and PSD/RPS printers are PC platforms intended for desktop use.

32. SYSTEM REQUIREMENTS. The PRM system requirements for floor space, floor loading, and electrical power for equipment are shown in Table 3-2, PRM Floor-Mounted Equipment Requirements. Requirements are depicted on a per-unit basis. Units to be externally mounted are listed in Table 3-3, PRM Externally Mounted Equipment Requirements. These units do not impact floor area or floor loading requirements.

TABLE 3-2. PRM FLOOR-MOUNTED EQUIPMENT REQUIREMENTS

LOCATION	EQUIPMENT	FLOOR SPACE	FLOOR LOADING (max)	POWER
T/R Site Shelter	Channel 1 Cabinet	21.0"W x 31.9"D	652.0 lbs	0.8 KW
	Channel 2 Cabinet	21.0"W x 31.9"D	652.0 lbs	0.8 KW
	Auxiliary Cabinet	21.0"W x 31.9"D	652.0 lbs	0.8 KW
	UPS	11.5"W x 32.0"D	495.0 lbs	0.4 KW
FAA Radar Equipment Room	RDS Cabinet 1	21.0"W x 31.9"D	785.0 lbs	1.56 KW
	RDS Cabinet 2	21.0"W x 31.9"D	785.0 lbs	1.56 KW
	RDS Cabinet 3	21.0"W x 31.9"D	677.0 lbs	0.9 KW
	UPS	32.0"W x 32.0"D	1400.0 lbs	0.7 KW
	Display Console 3	30.0"W x 56.0"D	980.0 lbs	0.35 KW
TRACON	Display Console 1	30.0"W x 56.0"D	980.0 lbs	0.35 KW
	Display Console 2	30.0"W x 56.0"D	980.0 lbs	0.35 KW

TABLE 3-3. PRM EXTERNALLY-MOUNTED EQUIPMENT REQUIREMENTS

LOCATION	EQUIPMENT	MOUNTING	MOUNTING AREA	WEIGHT	POWER
Antenna Tower	Antenna	Top	Not Applicable	Not Applicable	0 KW
	RF Distribution Unit	Note 1	Not Applicable	2000.0 lbs	0.8 KW
T/R Site Shelter	PSD	Desktop	19.0" x 22.0"	40.0 lbs	0.5 KW
	PSD Printer	Desktop	18.0" x 12.0"	12.0 lbs	0.3 KW
	HVAC No. 1	External	65.0" x 40.0"	580.0 lbs	15 KW
	HVAC No. 2	External	65.0" x 40.0"	580.0 lbs	15 KW
FAA Radar Equipment Room	Speaker	Wall	12.0" x 12.0"	5.0 lbs	0 KW
	PSD	Desktop	19.0" x 22.0"	40.0 lbs	0.5 KW
	PSD Printer	Desktop	18.0" x 12.0"	12.0 lbs	0.3 KW
	RPS Printer	Desktop	18.0" x 12.0"	12.0 lbs	0.3 KW
Remote Site	Parrot	External	24.0" x 30.0"	100.0 lbs	0.2 KW
	Parrot Antenna	External	Note 2	50.0 lbs	0 KW

Note 1: The RF Distribution Unit is mounted on the antenna tower below the PRM antenna.
Note 2: The Parrot Antenna is designed for mounting in various configurations.

33. INTERFACES.

a. External Interfaces. The PRM system interfaces to the ARTS system version existing at the installation site to facilitate the transfer of ARTS track data to the PRM system. The PRM/ARTS interface is a passive interface with data flow from the ARTS to the PRM system. Data provided to the PRM system consists of track information not available in the PRM system, including runway assignment, aircraft identity (Mode 3/A code), aircraft type, conflict alert, and low altitude alert. This interface is provided as part of the PRM RDS, typically located in the FAA TRACON and radar equipment room. The PRM system is designed to interface with a standard ARTS system, Version IIIA. However, different ARTS system versions may exist at each of the PRM installation sites. In order to compensate for this, an ARTS software "patch" must be installed at each of the PRM installation sites where an ARTS system other than Version IIIA exists. This software "patch" will allow the existing ARTS system to properly interface with the PRM system. The FAA region

responsible in which the PRM system(s) is to be installed will be responsible for the development and installation of this software "patch," with direction and documentation provided by the PRM Program Office. The development and installation of the software "patch" will be coordinated with the Operational Support Service, AOS-400, who is responsible for ARTS software configuration management.

b. Internal Interfaces. The PRM CS provides for intrasite data communications between the equipment located within the T/R site and the OPS site. The CS also provides intersite data communications between these two sites via a fiber optic link.

34. POWER SOURCES. PRM equipment located at the T/R site will be tied into commercial power sources. PRM equipment located at the OPS site will be tied into the local FAA/Airport Essential Power Bus.

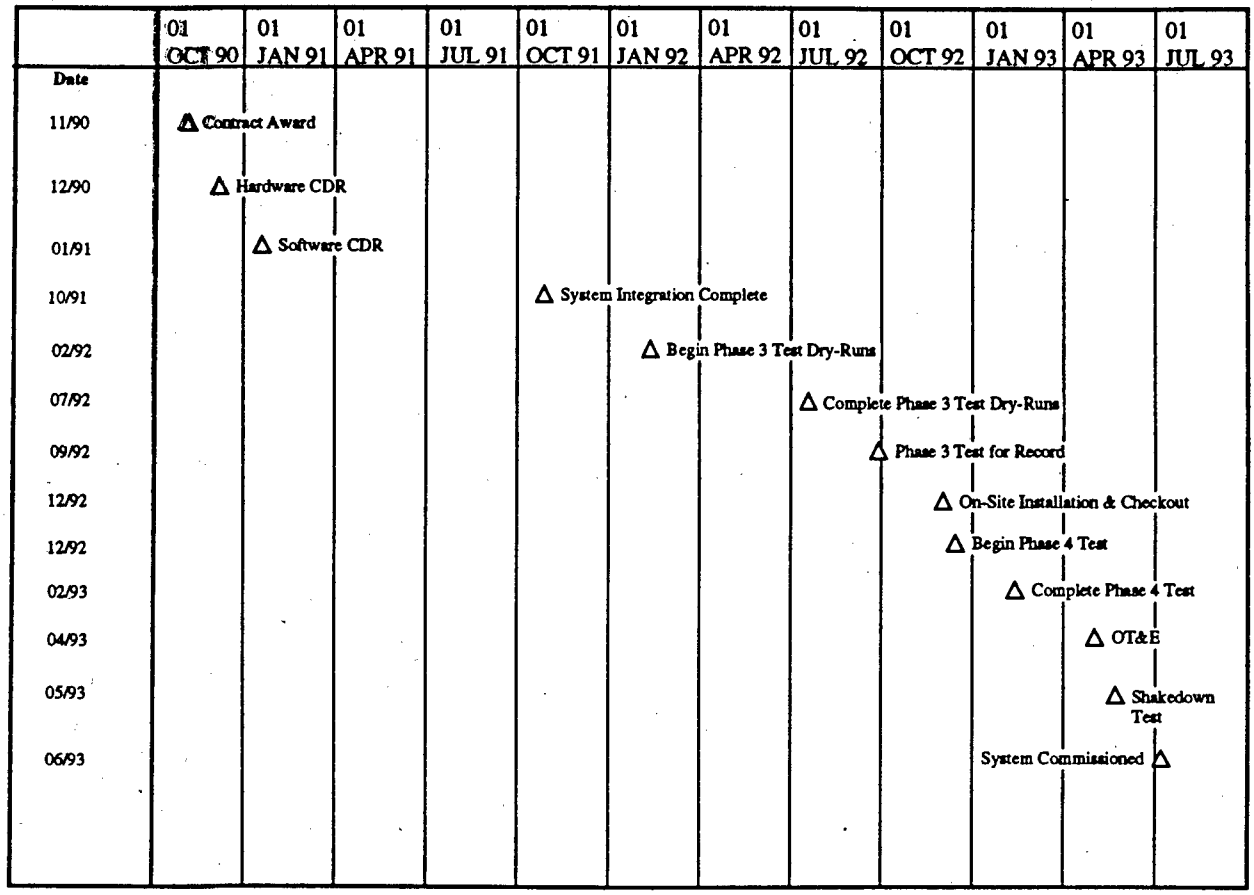
35.-39. RESERVED.

CHAPTER 4. PROJECT SCHEDULES AND STATUS

40. PROJECT SCHEDULES AND STATUS.

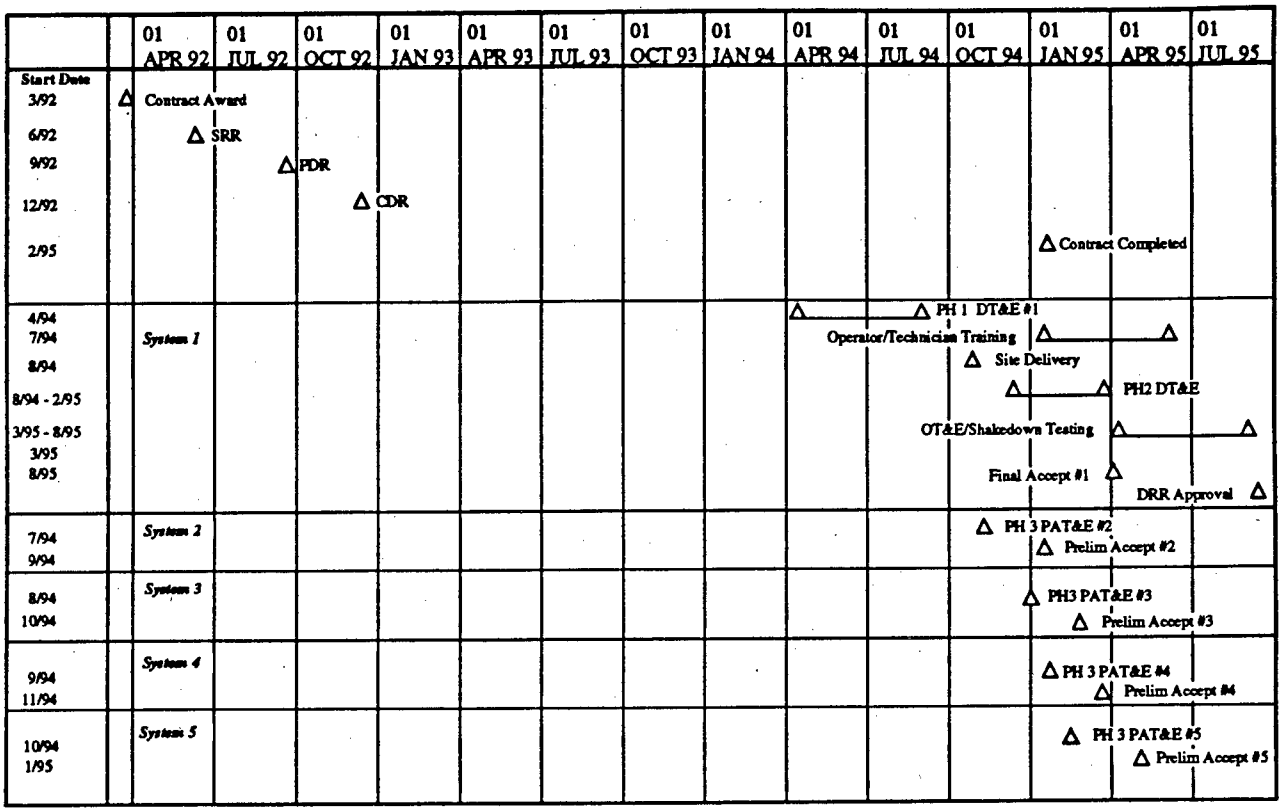
a. PRM Upgrade Program. The milestone schedule for the PRM Upgrade Program is shown in figure 4-1.

FIGURE 4-1. PRM UPGRADE PROGRAM MILESTONE SCHEDULE



b. PRM Limited Production Program. The milestone schedule for the PRM Limited Production Program is shown in figure 4-2.

FIGURE 4-2. LIMITED PRODUCTION PROGRAM MILESTONE SCHEDULE



41. MILESTONE/IMPLEMENTATION SCHEDULE SUMMARY.

a. PRM Upgrade Program. The upgrade PRM system, installed at RDU, was commissioned for operational use in June 1993. Key milestones for the commissioning process included conduct of operational test and evaluation (OT&E), maintenance shakedown testing, and flight inspection.

b. PRM Limited Production Program. The basic PRM Limited Production Program contract provides for production of five PRM systems and installation of the first system at Minneapolis-St. Paul International Airport. The installation of the remaining four systems at designated candidate sites is a priced option in the PRM Limited Production contract. Candidate sites for these PRM systems are identified in appendix 2. The PRM Limited Production contract also includes priced options for an additional three PRM systems and their installations.

42. INTERDEPENDENCIES AND SEQUENCE.

a. PRM Upgrade Program. The PRM Upgrade Program has no interdependencies with other FAA projects or schedules.

b. PRM Limited Production Program. The PRM Limited Production Program has no interdependencies with other FAA projects or schedules.

43.-49. RESERVED.

CHAPTER 5. PROJECT MANAGEMENT

50. PROJECT MANAGEMENT, GENERAL.

a. Program Structure/Administration. The PRM Upgrade and Limited Production Programs are under the auspices of the Program Director for Surveillance, ANR-1. The PRM Program Manager (PM) is ANR-300, and has overall responsibility for the design, development, testing, evaluation, production, and implementation of the PRM into the NAS. The PM keeps the FAA Administrator informed on project status, in accordance with Order 1810.1F, Acquisition Policy.

(1) Matrix Management. Matrix management will be used by the PM, who is the single focal point for all program performance and implementation. The PM will utilize personnel from various FAA organizations to support program requirements, within the guidelines provided by FAA policies, procedures, and directives. While there will be distinct lines of authority with regard to achieving program goals, informal communication and support among responsible program personnel will play a vital part in achieving successful implementation of the PRM.

(2) PM/Associate Program Manager Concept. The PM is supported by Associate Program Managers, including: headquarters Associate Program Managers from within ANR-100 (Surveillance Engineering Division), Associate Program Managers from various principal participating FAA organizations, and Associate Program Managers from appropriate FAA regions. The Associate Program Managers serve as focal points in their respective spheres for PRM implementation. Each is responsible for coordinating and reporting on all areas of responsibility assigned by the PM and on those efforts associated with that organization's and/or region's stated mission. The Associate Program Managers are empowered by the management of the organizations they represent to make decisions and commitments for that organization relating to the PRM Program. Major areas of concern to the Associate Program Managers include planning, budgeting, and implementation.

(3) Other Agencies and Contractor Personnel. The PRM Program utilizes the services of other agencies and contractor personnel, as appropriate. The personnel supporting the PRM Program require the cooperation and assistance of the FAA to perform their services. Appendix 4 lists the outside organizations providing technical support to the PRM Programs. Table 5-1 shows the PRM project management structure.

b. Key Individuals. Key individuals associated with the PRM Programs are depicted in table 5-1.

TABLE 5-1. PRM PROJECT MANAGEMENT STRUCTURE

Program Director ANR-1	
Program Manager ANR-300	
Associate Program Manager for Engineering (APME), ANR-700	Associate Program Manager for Contracting (APMC), ASU-320
Associate Program Manager for Testing (APMT), ACW-100	Associate Program Manager for General Counsel (APMGC), AGC-510
Associate Program Manager for Quality (APMQ), ASU-423	Associate Program Manager for Logistics (APML), ANS-430
Associate Program Manager for Systems Engineering (APMSE), ASE-300	Associate Program Manager for Aviation Policy (APMPO), APO-220
Associate Program Manager for R&D (APMRD), ARD-100	Associate Program Manager for Systems Capacity (APMSC), ASC-201
Associate Program Manager for Advanced Systems (APMAS), ATZ-110	Associate Program Manager for Air Traffic Requirements (APMR), ATR-120
Associate Program Manager for Flight Standards (APMFS), AFS-405	Associate Program Manager for Air Traffic Procedures (APMP), ATP-122
Associate Program Manager for Southern Region (RAPMSO), ASO-420A	Associate Program Manager for Great Lakes Region (RAPMGL), AGL-421
Associate Program Manager for Eastern Region (RAPMEA), AEA-451.1	

(1) PM. The PM has been assigned by the Administrator and is identified in table 5-1.

(2) Matrix Team Associate Program Managers. Associate Program Managers have been assigned from within FAA headquarters and the FAA Technical Center and are listed in table 5-1.

(3) Regional Associate Program Managers (RAPM's). RAPM's are identified in table 5-1.

(4) Other.

(a) Technical Officer (TO). The PRM Upgrade and Limited Production Programs each have a TO appointed from ANR, assigned by the PM and appointed by the contracting officer.

(b) Technical Onsite Representative (TOR). The TOR is appointed by the regional AF Division Manager.

(c) Test Director (TD). The TD is appointed by the FAA Technical Center Secondary Surveillance Systems Division, ACW-100.

c. Responsibilities.

(1) PM. The following are responsibilities of the PM:

(a) Has the overall responsibility for the design, development, production, testing evaluation, and implementation of PRM into the NAS.

(b) Develops the PMP, Acquisition Plan (AP), and the PIP.

(c) Develops the program and budget justification documentation, including that for R&D, Facilities and Equipment (F&E), and OPS.

(d) Controls program funds within approved appropriation levels.

(e) Manages the program within approved cost, scheduling, and technical baselines.

(f) Informs upper level management of program status, issues, and accomplishments.

(g) Co-chairs the Source Evaluation Board (SEB), if one is established.

(h) Serves as the agency spokesperson, advocate, and focal point for the program.

(i) Plans and implements the transition from F&E to OPS.

(j) Presents the Procurement Readiness Review (PRR), Deployment Readiness Review (DRR), and Program Director Status Review (PDSR).

(k) Determines acquisition and deployment strategies in coordination with applicable organizations.

(l) Establishes the PM team structure and guidelines to ensure that such program activities as plans, baselines, travel, and correspondence are properly coordinated and controlled.

(m) Obtains all necessary program approvals.

(n) Develops and maintains agreements with matrix organizations and formally documents them in program directives.

(o) Holds APM's accountable for accomplishments in accordance with directive agreement.

(p) Provides inputs on core APM's performance evaluation for APM's assigned by program directives and others, as appropriate.

(q) Ensures the quality of all PM documentation.

(r) Provides program guidance to all offices, services, the FAA Aeronautical Center, the FAA Technical Center, and the regions.

(s) Ensures the timely implementation of the PRM into the operational environment in a manner that minimizes costs and optimizes system performance.

(t) Identifies Office of the Program Director for Surveillance (ANR) requirements and requests staffs for the offices of appropriate services as necessary to support the installation and test efforts of the PRM.

(u) Prepares, analyzes, and distributes scheduling information to services and Regional Administrators, FAA Logistics Center, FAA Technical Center, and other organizations, as appropriate.

(v) Ensures the baseline configuration for the PRM and provides suitable documentation to appropriate offices upon transition to operational status.

(w) Provides planning and guidance information to all activities which interface with the PRM Programs for the timely implementation of support activity.

(x) Provides site preparation requirements to the regions and FAA Technical Center for monitoring the accomplishments of site activities leading toward the completion and acceptance of the site installations.

(y) Is responsible for factory and field acceptance testing.

(z) Provides technical oversight and/or direction to the contractor in the design, development, production, testing, installation, integration, and documentation of PRM hardware and software.

(aa) Ensures the development of PRM maintenance requirements and coordinates with the Maintenance Operations Division, through the National Airspace Integrated Logistics Support (NAILS) Management Team (NAILSMT).

(bb) Coordinates with the region(s) for scheduling and monitoring installation, dismantling, and/or disposal of equipment in accordance with Order 4800.2B, Utilization and Disposal of Excess and Surplus Property.

(cc) Ensures the availability of all software and hardware interfaces required for PRM implementation.

(dd) Ensures the availability of the PRM Shakedown Test Plan and Procedures.

(ee) Develops the Letter of Agreement (LOA) as per Order 6090.1, Development and Implementation of Remote Maintenance Monitoring System (RMMS) within the NAS, for the PRM Remote Monitoring Subsystem (RMS).

(ff) Ensures the availability of all required funding and maintains the contract within budget limitations.

(gg) Determines the distribution of all PRM documentation, both in-house and contractual.

(hh) Ensures that logistic support requirements in coordination with the Mike Monroney Aeronautical Center are planned, funded, and delivered in time to permit effective operational use of the PRM.

(ii) Budgets and funds for all NAILS requirements.

(jj) Budgets, supports, and co-chairs the NAILSMT.

(kk) Provides necessary inputs and assistance to the services and Regional Administrators for training of maintenance personnel.

(ll) Ensures the development of performance, maintenance, and calibration standards and procedures for the PRM.

(mm) Assists in, and ensures the development of, system operational changeover plans with Air Traffic Plans and Requirements Service (ATR) and the regions.

(nn) Provides configuration management support for the PRM via the Configuration Control Board (CCB) and PRM Program Planning Groups.

(oo) Resolves all issues emanating from installation, checkout, and integration of PRM into the NAS.

(2) APME. The following are responsibilities of the APME:

(a) Serves as TO or the Alternate Technical Officer (ATO), or delegates the authority, as appropriate.

(b) As TO, or ATO, is responsible for all technical aspects of the design, production, testing, delivery, and management of the PRM turnkey installations.

(c) As TO (or ATO), is also responsible for all aspects of field implementation and will maintain close liaison with the contractor's installation teams in the regions by providing technical guidance and direction within the scope of the contract.

(d) Selects and supervises staff personnel and assigns the technical guidance and direction within the scope of the contract.

(e) Provides for the management and accomplishment of program directives.

(f) Ensures the quality and technical integrity of the project.

(g) Manages the workload and ensures workforce effectiveness.

(h) Serves as the first-line technical advocate for the program.

(3) APMC. The following are responsibilities of the APMC:

(a) Solicits, negotiates, awards, and administers contracts for the PM.

(b) Conducts all communications, including discussions and negotiations, with the contractor.

(c) Determines what procurement information can be released.

(d) Serves as co-chairman of the SEB, if one is established.

(e) Performs cost or price analyses.

(f) Identifies conflicts of interest and prepares any resulting avoidance, neutralization, or mitigation plan.

(g) Awards and administers contracts, including, but not limited to, contract changes and options.

(h) Delegates authority to appropriate officials to accept deliverables under the contract.

(i) Ensures that no contract or change to a contract is signed unless all requirements of law, executive orders, regulation, and all other applicable procedures, including clearances and approvals, have been met and that contractors receive fair and equitable treatment.

(j) Responds to requests under the Freedom of Information Act related to the contract.

(k) Confirms Quality Reliability Officer (QRO) appointments for the program.

(4) APMT. The following are responsibilities of the APMT:

(a) This position is assigned to the FAA Technical Center. The roles and responsibilities of the APMT are outlined in Order 1810.4B, FAA NAS Test and Evaluation Policy.

(b) Serves as the PRM TD.

(c) Prepares all test plans and documents, other than those prepared by the contractor, required for the test and evaluation (T&E) of PRM.

(d) Develops OT&E and NAS integration test plans and procedures, and directs the PRM testing program.

(e) Coordinates all phases of Government testing and all test activities through first-site implementation.

(f) Serves as the main focal point for all testing, from beginning to end.

(g) Serves as a member of the NAILSMT.

(5) APMGC. The following are responsibilities of the APMGC:

(a) Serves as legal counselor to the PM and the matrix team, to include providing advice and opinion on legal questions brought by the PM or by any other APM.

(b) Acts as advisor to the PM and the matrix team on legal matters and business issues, particularly those which may affect the PRM Program mission, FAA posture in future negotiations or the FAA's vulnerability and liability to claims brought by current or future vendors or other contractors associated with the PRM program.

(c) Empowered to commit organizational resources in accordance with Order 1810.1F.

(d) Comments on and reviews top-level PRM program plans, as requested by the PM.

(e) Coordinates with the APMC the review of contractual documentation to ensure clarity and compliance with appropriate statutes, rules, regulations, and applicable Department of Transportation (DOT)/FAA orders and provides input to contractual documentation, as required.

(f) Advises designated members of any source evaluation team and source selection board on legal requirements and procedures.

(g) Represents the PM and the FAA in contacts with vendors and contractors which concern legal issues.

(h) Represents the PM and the FAA before various judicial and administrative tribunals, including the U.S. Claims Court, DOT Board of Contract Appeals (DOTBCA), General Accounting Office (GAO), and General Services Board of Contract Appeals (GSBCA).

(i) Attends monthly matrix meetings, as well as all other appropriate program meetings.

(j) Serves the Federal interest.

(6) APMQ. The following are responsibilities of the APMQ:

(a) Ensures in-plant quality assurance (QA) at the contractors' and subcontractors' facilities and at performance locations.

(b) Acts as the central point of contact for all quality assurance related issues.

(c) Ensures that all QRO duties are performed.

(d) Assures that the contractor/subcontractor(s) adhere to QA requirements.

(e) Ensures that contractors' requests for progress payments are reviewed and that payment/nonpayment recommendations are made, as appropriate.

(f) Reviews various documents concerning proposed changes, test plans, and schedules, and makes recommendations, as appropriate.

(7) APML. The following are the responsibilities of the APML:

(a) Advises the PM on all areas of NAILS.

(b) Establishes and co-chairs the NAILSMT.

(c) Coordinates all integrated logistics support activities of support organizations and ensures that each support organization designates an element manager to the NAILSMT.

(d) Develops the Integrated Logistics Support Plan (ILSP) for the PM.

(8) APMSE. The following are the responsibilities of the APMSE:

(a) Addresses system issues associated with requirements for the program and interfaces with the entire NAS.

(b) Performs NAS requirements analysis.

(c) Analyzes and defines alternate means of satisfying requirements.

(d) Develops and specifies system-level performance characteristics.

(e) Develops mission needs statements.

(f) Reviews specifications, statements of work (SOW), test plans, change proposals, and other subsystem documentation.

(g) Provides subsystem technical support and analyses.

(h) Manages the development, quality, and content of interface requirements documents.

(i) Conducts Reliability, Maintainability, and Availability (RMA) analyses and allocates RMA requirements to NAS elements.

(j) Develops security standards and conducts electronic vulnerability analyses of NAS subsystems.

(k) Develops NAS T&E verification and test matrices.

(l) Develops system standards for the acquisition, design, and documentation of NAS subsystems.

(m) Maintains baseline descriptions of systems, facilities, and equipment of current and proposed NAS elements.

(n) Develops configuration management requirements, practices, procedures, and policies.

(o) Plans and conducts physical and functional configuration audits of NAS subsystems.

(p) Coordinates and obtains support for the PM concerning any operations research needs of the program (for example, cost benefit analyses).

(q) Obtains, as required, support from facility system engineering for the program.

(9) APMP. The following are the responsibilities of the APMP:

(a) Coordinates preparation of air traffic procedures as applicable to the PRM system.

(b) Ensures PRM procedures are properly reflected in Orders 7110.65, Air Traffic Control; 7210.3, Facility Operation and Administration; and 7110.10, Flight Services.

(c) Coordinates, as required, a review of updates and changes to PRM procedures by the PRM matrix support organizations.

(d) Participates in all meetings, briefings, forums, and other activities which involve air traffic factors after coordination and approval by the Manager, Terminal Procedures Division, ATP-100.

(e) Serves as member of working groups established to analyze airports for PRM potential when requested by the PM and approved by ATP-100.

(f) Coordinates and provides air traffic operations information.

(g) Supports air traffic control PRM integration activities of the International Civil Aviation Organization (ICAO) through the International Procedures Branch, (ATP-140) and ANR-300.

(h) Provides expert advice to the PRM Program on air traffic procedures.

(10) APMR. The following are responsibilities of the APMR:

(a) Participates in appropriate PRM meetings, briefings, forums, and other activities, which involve air traffic factors after coordination and approval by ATR-100.

(b) Responsible for the evaluation of questions regarding air traffic requirements.

(c) Supports review of contractor's test plans and participates in test monitoring, as appropriate.

(d) Supports OT&E.

(e) Develops acquisition strategy with the PM to ensure that procurement meets air traffic requirements.

(f) Supports justification of requirements.

(g) Provides coordination with field elements.

(h) Provides regular PRM Program status reports to the PM.

(11) APMSC. The following are the responsibilities of the APMSC:

(a) Provides the system capacity expertise necessary to establish and sustain a successful program.

(b) Effectively represents the system capacity process (including its requirements, activities, and products) to the PM.

(c) Assures that the PM inputs are considered in the system capacity process and its activities.

(d) Effectively coordinates program needs and activities with other applicable FAA organizations, as necessary.

(e) Coordinates the resolution of NAS system-level technical conflicts between/among programs.

(12) APMAS. APMAS responsibilities are currently being developed.

(13) APMFS. The following are APMFS responsibilities:

(a) Develops pilot training programs to ensure that pilots understand the operational requirements of closely spaced parallel approaches to airports equipped with high update radar and precision runway monitor systems.

(b) Develops written material to support revisions, changes, and announcements, as appropriate, to the

following publications: Advisory Circular, NOTAM Publication, Airport/Facility Directory, Airman's Information Manual, Order 7110.65 (charting), and FAA Aviation News.

(c) Coordinates and supports informative and technically correct articles within the broad list of periodicals available (e.g., *Aviation Week and Space Technology, Business and Commercial Aviation, Flying, Air Line Pilot*, and Aircraft Owners and Pilots Association (AOPA) publications).

(d) Develops a video presentation for use by all levels of operations [Federal Aviation Regulations (FAR) 91, 121, 135, and 141] as a method to ensure pilot familiarization. In addition, this video will provide the necessary information for the development of training programs as may be required by operations.

(e) Develops a plan to address issues specific to the military and international community as additional users of the NAS.

(14) APMPO. The following are responsibilities of the APMPO:

(a) Develops establishment criteria for publication in *Airway Planning Standard One*.

(b) Provides aviation policy expertise to establish and sustain a successful program.

(c) Effectively represents the aviation policy process (including its requirements, activities, and products) to the PM.

(d) Assures that PM inputs are considered in the aviation policy process and its activities.

(e) Effectively coordinates program needs and activities with other organizations, as necessary.

(f) Coordinates the resolution of NAS system-level technical conflicts between/among programs.

(15) APMRD. The following are responsibilities of the APMRD:

(a) Conducts simulations to evaluate the degree to which the PRM displays will support the safe reduction in runway spacing for multiple parallel runway configurations.

(b) Provides data analyses of the simulation results.

(c) Prepares technical reports of the simulation findings.

(16) RAPM's. The following are the responsibilities of the RAPM's:

(a) Planning.

1. Coordinates (and develops, if necessary) regional and facility implementation and transition plans.

2. Assesses project and program interdependencies and coordination requirements.

3. Facilitates the development of training requirements by the identification of regional/facility training needs and coordination with the appropriate service.

4. Chairs planning briefings and meetings and prepares reports, as necessary.

5. Provides regional inputs to headquarters PM's for planning purposes.

6. Represents the region in program-level national workshops and meetings.

7. Represents the region during national DRR's and conducts regional DRR, as necessary.

8. Coordinates and participates in engineering studies, requirements reviews, site surveys, and site selections, as necessary, to determine specific regional requirements and scope of work for each individual project.

9. Ensures that funding is adequate, that job order numbers are assigned, and that the scope of work for each individual project is properly defined and disseminated.

(b) Budgeting.

1. Participates in the development of an annual revision of items for the CIP.

2. Participates in the review and coordination of national Call for Estimates (CAE) and participates in the development of regional CAE's.

3. Provides regional inputs to the headquarters PM's for budgeting purposes.

4. Ensures that valid and timely cost estimates are developed which address total regional requirements.

5. Ensures that budget submissions are well justified and contain complete material lists.

6. Maintains awareness of budget items and the status of validated versus non validated projects.

(c) Implementation.

1. Establishes working relationships with headquarters PM's.

2. Serves as a regional focal point for the F&E programs, including such areas as planning, budgeting, funding, logistics support, training, test equipment, deployment readiness, installation, capitalization, maintenance, and operation.

3. Identifies and disseminates the scope of the programs and the regional and national turnkey contractor responsibilities.

4. Chairs progress briefings and meetings and prepares reports, as necessary.

5. Coordinates requirements for logistics support, leased services, real estate, and utilities.

6. Represents the region in program-level national workshops and meetings.

7. Reviews and validates project authorizations.

8. Develops a generic Regional Project Management System (RPMS) network for each project and populates and maintains each network in accordance with the best available anticipated equipment delivery date.

9. Coordinates and monitors all implementation activities based on the program implementation plan.

10. Tracks funding obligations versus project accomplishments through the RPMS, identifies funding shortfalls and surpluses, and recommends solutions.

11. Provides cost estimates and justifications, as necessary, for submission with the quarterly fiscal summary review and request for funding adjustments.

12. Tracks and reports on milestone accomplishment for each individual project, including such areas as project authorization, equipment availability, site preparation, initial operating capability, and facility commissioning and capitalization.

13. Facilitates resolution of problems and develop recommendations for the Facilities Review Board (FRB).

14. Reviews Joint Acceptance Inspection (JAI) reports and facilitates the resolution and closing of exceptions.

15. At the conclusion of major projects, chairs a critique to identify problems that can be avoided in future programs and documents and implements needed changes.

16. Participates in the NAILSMT.

17. Develops and installs the ARTS IIIA software "patch."

18. Conducts site preparation activities, as required.

(17) TO. The following are responsibilities of the TO:

(a) Responsible for all technical aspects of the contractor's efforts to design, produce, test, deliver, and manage the PRM turnkey installations.

(b) Responsible for all aspects of the contractor's field implementation, maintaining close liaison with the contractor's installation teams in the regions by providing technical guidance and direction within the scope of the contract.

(18) QRO. The following are responsibilities of the QRO:

(a) Provides in-plant QA at the contractor's and subcontractor's facilities.

(b) Assures that the contractor/subcontractor(s) adhere to QA requirements.

(c) Accepts or rejects systems, equipment, and materials in accordance with contract requirements.

(d) Reviews contractors' requests for progress payments and make recommendations, as appropriate.

(e) Reviews various documents concerning proposed changes, test plans and schedules, and makes recommendations, as appropriate.

51. PROJECT CONTACTS. Primary points of contact for the PRM Program are identified in Appendix 3, PRM Project Contact List.

52. PROJECT COORDINATION. The following subparagraphs provide a brief overview of program support groups and their responsibilities to assist the PM in managing the PRM Program:

a. Headquarters APM's. Headquarters APM's provide required support to the PM within their respective areas of responsibility.

b. RAPM's. RAPM's serve as focal points in their respective regions for all PRM implementation activities. As the PM's regional representatives, they work closely with the PM and APME (TO). They are designated by the regional AF division manager and are accountable for ensuring that the PRM is implemented in an orderly manner. The regional APM's tasks include, but are not limited to, the following:

(1) Coordinates/manages regional deployment activities.

(2) Provides guidance and direction to FAA site personnel.

(3) Provides inputs and periodic technical reports describing the deployment progress at each site to the TO.

(4) Coordinates with Air Traffic (AT) for test activities associated with the air traffic control (ATC) system.

(5) Notifies the JAI Board Chairman of JAI readiness and conducts integration of the PRM into the NAS (Order 6030.45, Facility Reference Data File) and ensures the Airway Facilities (AF) sector manager or appropriate representatives are present.

(6) Reviews contractor's site engineering reports.

c. Configuration Control Board (CCB). In accordance with Order 1800.8F, NAS Deployment Readiness Review, the CCB is the official agency-authorized forum to approve or disapprove baselines and changes to baselines. There is a central NAS CCB to establish and control baselines and to administer configuration control. From this CCB, authority is delegated to lower level CCB's to effectively administer proposed changes at the most appropriate level. All lower level CCB's will be accountable to the NAS CCB which has been established through a charter defining its authority, responsibilities (including the specific documents over which the CCB has control), and membership. Decisions and directions are documented Configuration Control Decisions (CCD), which either approves, disapproves, defers, or refers the change request to another CCB. When contractual action is required, the CCD serves as a basis for the preparation of a procurement request which is submitted to the contracting officer. The CCD may also be distributed to other Government agencies and serves as an official notification of CCB action. Representatives on the CCB are to include the various agency services/offices that have responsibilities to acquire, support, and operate the system. Other representatives may be invited to attend as required.

53. PROJECT RESPONSIBILITY MATRIX. The PRM Project Responsibility Matrix is shown in table 5-2.

54. PROJECT MANAGERIAL COMMUNICATIONS. Project managerial communication will be used to maintain effective and responsible control of overall PRM progress, reviews, conferences, and working sessions among the PM, Associate Program Managers, TO, and the contractor. Participation in these conferences and working groups by various FAA offices will be requested at the discretion of the PM.

55. IMPLEMENTATION STAFFING. The following personnel are responsible for the implementation of the PRM Program:

a. PM. The Program Director for Surveillance (ANR-1) has designated ANR-300 to serve as PM for the PRM Programs.

b. TO. The PM has designated two members of ANR-700 as TO's for the PRM Upgrade and Limited Production Programs. The TO's will be responsible for all aspects of design, production, testing, delivery, installation, NAS integration, and management of the PRM contracts. The TO's are also responsible for all aspects of field implementation and will maintain close liaison with the regions and contractor's installation teams in the regions.

TABLE 5-2. PRM PROJECT RESPONSIBILITY MATRIX

TASK/PLAN/ACTIVITY	PRIMARY OFFICE	SUPPORTING OFFICE
Project Management and Control	ANR-300	All
Technical Management	ANR-700	Regions, VNTSC
System Design	Contractor	ANR-700, VNTSC
Implementation	ANR-700	Regions, VNTSC
Test and Evaluation	ACW-100A	ANR-700, VNTSC
Test Director Integration and Operational Test and Evaluation	ACW-100A	ATP-122, TSC
Test Director Shakedown Test	ACW-100A, AOS-230	ANR-700, ATR-120, AFS-405, ATP-122
Commissioning	Region	Region (AF) Region (AT)
Site Selection	AAT-1	ATR-120, ARD-100
Environmental Impact	ANR-300	Region
Logistics Support	ANS-430	ANR-700, VNTSC
NAILS Plan	ANS-430	VNTSC
Maintenance Training	ASM-250	AHT-400, FAA Academy
Operations Training	ATZ-110	AHT-500, ATP-120, FAA Academy
Frequency Management	Headquarters (AF)	Region (AF)
Financial Management	ANR-300	Regions
Configuration Management	ANR-300	ASE-300, ASU-423, ANR-700
Contract Administration	ASU-320	ANR-700

c. RAPM's. RAPM's serve as the focal point for all regional PRM activities, including site preparation.

d. TD. The TD is appointed by ACW-100, the Communications/Navigation/Surveillance Division of the Test and Evaluation Service, to coordinate all phases of FAA testing, to develop OT&E test plans and procedures, and to direct the conduct of the above tests.

56. PLANNING AND REPORTS. The successful implementation of the PRM programs will be monitored by the use of the following:

a. Program Status Reviews. The PM will brief higher level management on the status of program schedules, cost information, and technical topics. These reviews provide for top-level management control of the program. The PM may request the support of functional or contractor organizations in providing status and information on specific program topics.

b. Contractor Progress Reports. The contractor will apprise the FAA on a monthly basis of their assessment of contractual effort, work scheduled for the next period, and special problem areas, including proposed solutions.

c. Configuration Control and Status Accounting Report. The contractor provides data needed to identify configuration identification and determine the status of change proposals, deviations and waivers, including implementation status.

d. Design Reviews. Technical design reviews between ANR-700 and the PRM contractors are held at scheduled times. Technical interchange meetings (TIM), addressing specific PRM activities, are convened on an as required basis. Participating organizations are notified in advance of the date, time, and location by the PM.

57. APPLICABLE DOCUMENTS. The following documents are applicable to this order:

a. FAA-D-2494/b, Technical Instruction Book Manuscript: Electronic, Electrical, and Mechanical Equipment, Requirements for Preparation of Manuscript and Production Books.

b. FAA-E-2887, PRM Limited Production System Specification.

c. Order 1010.51A, U.S. National Aviation Standard for the Mark X Air Traffic Control Beacon System.

d. Order 1800.8F, NAS Deployment Readiness Review.

e. Order 1810.1F, Acquisition Policy.

f. Order 1810.4B, FAA NAS Test and Evaluation Policy.

g. Order 4453.1B, Quality Assurance of Material Procured by the FAA.

h. Order 4800.2B, Utilization and Disposal of Excess and Surplus Property.

i. Order 6000.38, Policy to Determine NAS Equipment Initial Sparing Requirements for Airway Facilities Work Centers Locations and Field Locations.

j. Order 6030.45, Facility Reference Data File.

k. Order 6090.1, Development and Implementation of Remote Monitoring Subsystem (RMS) within the NAS.

l. Order 7110.10, Flight Services.

m. Order 7110.65, Air Traffic Control.

n. Order 7210.3, Facility Operations and Administration.

o. FAA-STD-028A, Contract Training Programs.

p. MIL-STD-1388-2A, Department of Defense Requirements for a Logistics Support Analysis.

q. PRM Program Requirements Document (PRD).

58.-59. RESERVED.

CHAPTER 6. PROJECT FUNDING

60. PROJECT FUNDING STATUS, GENERAL. PRM funding appropriations are described in the following paragraphs.

a. FAA Research, Engineering and Development (R,E&D) Appropriations have been provided to fund the PRM Demonstration Program and the work on the E-Scan Upgrade Program through system commissioning. R,E&D appropriations include appropriations for FY1991 to complete the commissioning of the Upgrade system and FY1993 for future development/evaluation of the E-Scan system technology.

b. FAA Facilities and Equipment (F&E) Appropriations

(1) E-Scan Upgrade reprogramming of F&E funds was required to provide funding to complete system commissioning and to conduct simulations to develop procedures for PRM operations.

(2) E-Scan Limited Production funds have been allocated for FY1992 and FY1993 for the procurement of five systems.

(3) Full-Scale Production funds will be required starting in FY1996 based on the outcome of the continuing R&D efforts. These funds have not been allocated.

c. FAA Operations Appropriations will be required for contract site and depot maintenance of the Upgrade system.

61. FUNDING ALLOCATIONS. Funding allocations include the following:

a. Regional costs include real estate acquisition, site preparation and construction costs, including power substations, roads, facility foundations, and system flight inspection.

b. Prime contract costs include system costs associated with procuring PRM system equipment and installation costs, including shelter and tower construction, alignment, and checkout.

c. Logistics support costs include costs associated with providing and supporting fielded PRM systems. These costs include spares procurement, maintenance contractor support, and depot support.

d. Support costs include FAA operational support costs associated with the development of the PRM, such as headquarters support and travel, document approval, and contract administration. Support costs also include support contractor services, program management support, and required studies in support of the PRM Program.

62. FUNDING REQUIREMENTS. A summary of the overall PRM funding status and requirements is shown in table 6-1.

TABLE 6-1. FUNDING APPROPRIATIONS ($M)

TYPE	PRIOR	FY1993	FY1994	FY1995	FY1996 & BEYOND
R,E&D	15.0	----	----	----	----
F&E	80.0	14.0	22.0	0.0	15.9
TOTAL	95.0	14.0	22.0	0.0	15.9

63.-69. RESERVED.

CHAPTER 7. DEPLOYMENT

70. GENERAL DEPLOYMENT ASPECTS.

a. PRM Upgrade Program. The PRM upgrade contract includes complete turnkey installation by the contractor, MSI Services, Inc. As such, the contractor will schedule, coordinate, and staff the efforts required for the PRM installation efforts with absolute minimum disruption to ongoing NAS operations. Once the equipment has been delivered, installation work will proceed on a regularly scheduled basis, normally 5 days per week, without lapse, through completion. All activities of the contractor from site preparation, delivery, construction, through installation, checkout and acceptance will be coordinated with the PRM Program Office. All technical information furnished to the contractor will be through the PRM upgrade TO, as coordinated through the PRM PM. The PRM PM has the responsibility of data requirements. All contractual information will be forwarded through the contracting officer.

(1) FAA Headquarters Furnished Information. The PRM Program Office, ANR-300, will be the single focal point in the FAA to collect FAA-furnished information in support of the PRM Upgrade Program.

(2) FAA Region Furnished Information. The FAA Southern Region will furnish the PRM PM the supporting data required for site surveys, site layouts, and all other required information, when requested, in support of the PRM Upgrade Program.

b. PRM Limited Production Program. The PRM Limited Production contract includes complete turnkey installation by the contractor, Allied-Signal/Bendix Corp. Installation of the PRM system at the first site is included as part of the base PRM contract, with options for installation at the remaining four sites. As such, the contractor will schedule, coordinate, and staff the efforts required for the PRM installation efforts with absolute minimum disruption to ongoing NAS operations. Once the equipment has been delivered, installation work will proceed on a regularly scheduled basis, normally 5 days per week, without lapse, through completion. All activities of the contractor from site preparation, delivery, construction, through installation, checkout and acceptance will be coordinated with the FAA regional TOR . The DRR process is scheduled to be initiated prior to installation at the first site. Five PRM systems are scheduled for installation at the locations identified in appendix 2.

All technical information furnished to the contractor will be through the PRM Limited Production TO, as coordinated through the PRM PM. The PRM PM has the responsibility of data requirements. All contractual information will be forwarded through the contracting officer.

(1) FAA Headquarters Furnished Information. The PRM Program Office, ANR-300, will be the single focal point in the FAA to collect FAA-furnished information in support of the PRM Limited Production Program.

(2) FAA Region Furnished Information. The FAA regions will furnish the PRM PM the supporting data required for site surveys, site layouts, and all other required information, when requested, in support of the PRM Limited Production Program.

71. SITE PREPARATION.

a. PRM Upgrade Program. The PRM Upgrade Program contractor shall be responsible for all site preparations, including access roads, utilities, security fences, foundations, and construction, as applicable.

b. PRM Limited Production Program. The PRM Limited Production Program contractor shall be responsible for all site preparations, including access roads, utilities, security fences, foundations, and construction, as applicable. The contractor will provide the FAA with a Site Preparation Installation Report (SPIR) approximately 6 months prior to system delivery. The SPIR will be used by the FAA to perform necessary activities not performed by the contractor. The contractor is required to provide a SPIR for each site receiving PRM equipment.

72. DELIVERY.

a. PRM Upgrade Program. The PRM Upgrade Program contractor is required to pack, ship, and off-load all PRM equipment. Packing and shipment will be in accordance with FAA-approved procedures.

b. PRM Limited Production Program. The PRM Limited Production Program contractor is required to pack, ship, and off-load all PRM equipment. Packing and shipment will be in accordance with FAA-approved procedures. All PRM equipment and associated materials will be delivered to each installation site coincident with the site-specific delivery schedule shown in appendix 2.

73. INSTALLATION PLAN.

a. PRM Upgrade Program. Installation and checkout of the PRM Upgrade system is the responsibility of the PRM Upgrade Program contractor, on a turnkey basis. The entire installation effort will be under the authority of the PRM PM, with assistance from APM's and other regional and site representatives. Regional site drawings of each facility are to be furnished to the contractor to facilitate the installation of PRM equipment. Coordination with the FAA Region on the installation plan/schedules will be accomplished by the PRM Program Office. The contractor will schedule, coordinate, and staff the efforts required for the expeditious completion of PRM system installation with absolute minimum disruption to ongoing NAS operations.

b. PRM Limited Production Program. Installation and checkout of the first PRM Limited Production system is the responsibility of the PRM Limited Production Program contractor on a turnkey basis. The turnkey installation and checkout of systems two through five are priced options in the PRM Limited Production contract. The entire installation effort will be under the authority of the PRM PM, with assistance from APM's and other regional and site representatives. The TOR will witness and certify the acceptability of each system installation. The SPIR will completely describe how the contractor will accomplish all turnkey activities relating to the turnkey installation of the PRM system at each of the installation sites. Regional site drawings of each facility are to be furnished to the contractor to facilitate the installation of PRM equipment. Coordination with the FAA regions on the installation plan/schedules will be accomplished by the PRM Program Office. The contractor will schedule, coordinate, and staff the efforts required for the expeditious completion of PRM system installation with absolute minimum disruption to ongoing NAS operations. All contractor activities will be coordinated with the TOR.

74.-79. RESERVED.

CHAPTER 8. VERIFICATION

80. FACTORY VERIFICATION. Government-witnessed contractor testing will be conducted in phases; each phase is designed to provide increased assurance that system requirements are being met.

Phase I In-Plant Developmental Test and Evaluation (DT&E)
Phase II Onsite DT&E
Phase III In-Plant Production Acceptance (PAT&E)
Phase IV Onsite PAT&E

a. Developmental Test and Evaluation (DT&E). DT&E is designed to demonstrate that the first article unit meets the specification. DT&E is performed before going into production.

b. Production Acceptance Test and Evaluation. PAT&E ensures that the production units meet the specification. PAT&E will be performed on all production equipment to ensure manufacturing consistency. Each test phase will not begin until verification of previous phase testing, including reverification resulting from required changes or modifications, has been completed, with the exception of reliability testing.

c. PRM Upgrade Program. The PRM Upgrade Program will undergo the four phases of testing as identified. Phase I and II testing were completed as part of the PRM E-Scan Demonstration Program. Phase III and IV tests will be completed as part of the PRM Upgrade Program prior to FAA acceptance of the PRM Upgrade system.

d. PRM Limited Production Program. The PRM Limited Production Program Master Test Plan (MTP) defines the verification phases and how individual test procedures will be developed and approved to verify that the requirements of the PRM specification have been met. The PRM Limited Production Program Specification, FAA-E-2887, contains a Quality Verification Matrix (QVM), which provides a functional decomposition of the specification requirements with associated verification methods, either test, analysis, inspection, or demonstration.

81. CHECKOUT. Preliminary onsite testing will be conducted prior to formal Phase II/IV testing at the PRM installation sites for both the PRM Upgrade and Limited Production Programs. This testing will constitute a dry run of the formal testing using Government-approved test procedures and will be performed following equipment installation. Data will be collected and certified by the contractor and submitted to the FAA for review prior to the start of formal onsite testing.

82. CONTRACTOR INTEGRATION TESTING. Contractor integration testing will be conducted at the contractor's facility prior to Phase I DT&E to demonstrate all system internal and external interfaces perform for designed dataflow and performance.

83. CONTRACTOR ACCEPTANCE INSPECTION (CAI). For both the PRM Upgrade and Limited Production Programs, the contractor will demonstrate to the FAA, through the integration and onsite testing, that the PRM system has met all technical and functional requirements. The completion of these tests designates acceptance of the equipment by the FAA. At this time, the FAA should prepare the FAA Form 256, Inspection Report of Material or Services.

84. FAA INTEGRATION TESTING. The FAA will conduct integration operational test and evaluation (IOT&E) testing at the completion of factory verification testing for both the PRM Upgrade and Limited Production systems. This integration testing will be designed to assess the system's ability to successfully be incorporated into the NAS and will be validated at the first installation site. The FAA Technical Center (ACW-100A) is responsible for the development of IOT&R plans and procedures.

85. SHAKEDOWN AND CHANGEOVER. The FAA will conduct system shakedown testing on both the PRM Upgrade and Limited Production systems. Shakedown testing will be performed once the FAA takes responsibility of the PRM systems from the turnkey contractor. AOS-230 is responsible for developing test plans and procedures to support shakedown testing. ACW-100A will provide testing support during shakedown testing. System shakedown testing will verify operational effectiveness, suitability, and maintainability. System shakedown testing will also permit facility personnel to become familiar the with PRM system and become proficient in diagnosing problems and effecting repairs. It will reflect the integrated readiness of personnel, procedures, and the PRM system to assume field operational status.

86. JOINT ACCEPTANCE INSPECTION (JAI). A JAI will be conducted in accordance with Order 6030.45, Facility Reference Data File, for both the PRM Upgrade and Limited Production Programs. The purpose of the JAI is to ensure that each PRM system meets specified requirements for operation and maintenance and is ready to be commissioned. The Joint Acceptance Board (JAB) may include representatives from ANR, ATR, regional offices, PRM installation sites, and other organizations, as appropriate. JAI documentation consists of Forms 6030.18 through 6030.25 and the data contained therein. The PRM Upgrade and Limited Production

systems will be designated operationally certified upon satisfactory completion of the JAI.

87.-89. RESERVED.

CHAPTER 9. INTEGRATED LOGISTICS SUPPORT

90. MAINTENANCE CONCEPT.

a. PRM Upgrade Program. The PRM upgrade system at RDU will be contractor maintained for its complete life cycle. The FAA has awarded a contractor maintenance and logistics support contract to provide all site and depot-level maintenance and supply support. AF technicians will receive training to enable them to certify system repairs by contractor personnel.

b. PRM Limited Production Program. The FAA will support the PRM Limited production systems under a two-level maintenance concept. Site-level maintenance will consist of fault isolation, LRU replacement, and preventive maintenance tasks. Depot maintenance will include a contractor repair service for failed LRU's and software support. Hardware and software modifications will be controlled through the NAS Change Proposal (NCP) process. The contractor will provide interim site maintenance until FAA technicians complete training and are prepared to assume a PRM site maintenance support role. Contractor repair service for depot-level maintenance will remain in place for the life of the system. However, the PRM Limited Production contract has guaranteed options that provide for depot-level NAILS documentation and establishment of a Program Support Facility (PSF). The establishment of a PSF shall include both PSF hardware and software, training, and funding for onsite technical engineering services. These options, if exercised, will enable the FAA to assume depot-level support for the PRM Limited Production systems.

91. TRAINING.

a. PRM Upgrade Program. Training for air traffic controllers and AF technicians will be provided by the PRM Upgrade Program contractor in accordance with FAA-STD-028A and the Training Requirements Enhancement Modification to the Upgrade PRM Program Requirements Document (PRD). The controller class will address operation of the PRM system. The technician class will cover theory of operation and system troubleshooting to provide AF technicians with sufficient understanding of the PRM upgrade system to certify its repair.

b. PRM Limited Production Program. The PRM Limited Production Program contractor will develop a PRM training program in accordance with FAA-STD-028A. Training will include an operator training course to instruct air traffic controllers in the operation of the PRM system and a site-level maintenance training course designed to train FAA technicians on PRM

troubleshooting, repair, preventive maintenance, and certification training. The contractor will conduct all training on site and will provide copies of all training materials and lesson plans to the FAA Academy to support attrition training programs. The PRM Limited Production Program contract also contains options for additional presentations of the controller and technician training courses, as well as a training course for depot repair technicians and second-level support engineers.

92. SUPPORT TOOLS AND TEST EQUIPMENT.

a. PRM Upgrade Program. The PRM Upgrade Program contractor will furnish, use, and maintain any equipment (fixed or mobile) that is necessary to operate and maintain the PRM Upgrade system. This includes any common and special tools, test equipment, calibration and calibration test equipment, and ground handling equipment.

b. PRM Limited Production Program. The PRM Limited Production Program contractor will identify, document, and provide all equipment needed to support, operate, and certify the PRM system. Tools and equipment will be identified through a tailored Logistics Support Analysis (LSA) in accordance with MIL-STD-1388-2A, Department of Defense Requirements for a Logistics Support Analysis. Documentation of support equipment will be included as part of the Provisioning Parts List and will cover both common and special tools and test equipment. The contractor will furnish, use, and maintain all tools and test equipment required for LRU repair under contractor repair service.

93. SUPPLY SUPPORT.

a. PRM Upgrade Program. Under the terms of the contractual vehicle for maintenance support, the PRM Upgrade Program contractor will establish facilities and procedures to provide spare parts, LRU's, and replenishment of site-level spares and depot-level repair parts. The FAA will provide an initial supply of required site spares and repair parts, delivered with the upgrade PRM at RDU, to support the system for one year. The contractor will be responsible for the replenishment of spare and repair parts.

b. PRM Limited Production Program. The PRM Limited Production Program contractor will submit a Provisioning Parts List (PPL) that identifies all site-level LRU's and spare parts, with recommended sparing quantities, required to enable the PRM system to meet or exceed the availability detailed in the E-Scan PRM Specification. The Government shall evaluate and approve

this list prior to procurement of site spares. Once procured, the contractor will provide site spares to each PRM work/site center in accordance with Order 6000.38, Policy to Determine NAS Equipment Initial Sparing Requirements for Airway Facilities Work Centers Locations and Field Locations. The FAA Logistics Center will be responsible for managing the requisitioning and shipment of spares and repair parts between individual sites and the contractor depot repair facility.

94. VENDOR DATA AND TECHNICAL MANUALS.

a. PRM Upgrade Program. The PRM Upgrade Program contractor will provide system documentation to the appropriate standard according to the PRM Program Requirements Document. The system contractor will furnish the following: Operator Manual, Training Plan, Technical Instruction Book, in accordance with FAA-D-2494, training materials, software design documentation, level II engineering drawings, installation drawings, equipment tree, types and skills report, one year spares report, test equipment report, and Commercial Off-the Shelf (COTS) manuals. AOS-230 will prepare a maintenance handbook for the PRM upgrade system.

b. PRM Limited Production Program. The PRM Limited Production Program contractor will provide Equipment Instruction Books, training and course materials, COTS manuals, provisioning documentation, and any other documents and plans required by the contract. Provisioning documentation will include spare parts peculiar lists, numerical parts lists, and tool lists. AOS-230 will provide a maintenance handbook. A reprocurement data package is currently provided for under a priced contract option.

95. EQUIPMENT REMOVAL.

a. PRM Upgrade Program. The PRM Upgrade Program contractor will remove any equipment from the PRM E-Scan Demonstration system installed at RDU and not identified for use with the PRM upgrade system. The RDU Airway Facilities Sector Field Office (AFSFO) is responsible for storage of displaced equipment until receipt of final disposition instructions.

b. PRM Limited Production Program. A Limited Production PRM system will replace the PRM upgrade system at RDU. The RDU AFSFO will be responsible for the removal and storage of the PRM upgrade system until the FAA determines final disposition of the equipment. All other candidate PRM sites have no equipment to remove as part of the PRM installation process.

96. FACILITIES. The FAA is responsible for providing space and facilities for PRM equipment in the FAA TRACON and radar equipment room as well as conducting other site preparation needs for both the PRM Upgrade and Limited Production Programs. The PRM Limited Production Program contractor will provide the T/R site equipment shelter and PRM tower as part of the turnkey installation.

97.-99. RESERVED.

CHAPTER 10. ADDITIONAL PROJECT IMPLEMENTATION ASPECTS

100.-109. RESERVED.

APPENDIX 1. ACRONYMS

AF	Airway Facilities
AFS	Airway Facilities Sector
AFSFO	Airway Facilities Sector Field Office
AOPA	Airline Owners and Pilots Association
AP	Acquisition Plan
APMAS	Associate Program Manager for Advanced Systems
APMC	Associate Program Manager for Contracts
APME	Associate Program Manager for Engineering
APMFS	Associate Program Manager for Flight Standards
APMGC	Associate Program Manager for General Counsel
APML	Associate Program Manager for Logistics
APMP	Associate Program Manager for Air Traffic Procedures
APMPO	Associate Program Manager for Aviation Policy
APMQ	Associate Program Manager for Quality
APMR	Associate Program Manager for Air Traffic Requirements
APMRD	Associate Program Manager for Research & Development
APMSC	Associate Program Manager for Systems Capacity
APMSE	Associate Program Manager for Systems Engineering
APMSO	Associate Program Manager for Southern Region
APMT	Associate Program Manager for Testing
APS	Airport Planning Standard
ARTS	Automated Radar Terminal System
ASR	Airport Surveillance Radar
AT	Air Traffic
ATC	Air Traffic Control
ATCBI	Air Traffic Control Beacon Interrogator
ATO	Alternate Technical Officer
BRS	Beacon Radar Subsystem
CAE	Call for Estimates
CAI	Contractor Acceptance Inspection
CCB	Configuration Control Board
CCD	Configuration Control Decisions
CIP	Capital Investment Plan
COTS	Commercial Off-the-Shelf
CPMS	Confidence and Performance Monitoring Subsystem
CS	Communications Subsystem
DOT	Department of Transportation
DOTBCA	DOT Board of Contract Appeals
DRR	Deployment Readiness Review
DT&E	Developmental Test and Evaluation
F&E	Facilities and Equipment
FAA	Federal Aviation Administration
FAR	Federal Aviation Rules
FRB	Facilities Review Board
FY	Fiscal Year
GAO	General Accounting Office
GSBCA	General Services Board of Contract Appeals

HVAC	Heating, Ventilation, and Air Conditioning
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
ILSP	Integrated Logistics Support Plan
IMC	Instrument Meteorological Conditions
IOT&E	Integration Operational Test and Evaluation
JAB	Joint Acceptance Board
JAI	Joint Acceptance Inspection
KDP	Key Decision Point
LOA	Letter of Agreement
LRU	Line Replaceable Unit
LSA	Logistics Support Analysis
MTBCF	Mean Time Between Critical Failures
MTP	Master Test Plan
MTTR	Mean Time To Repair
NAILS	National Airspace Integrated Logistics Support
NAILSMT	NAILS Management Team
NAS	National Airspace System
NCP	NAS Change Proposal
NMI	Nautical Miles
NOTAM	Notice To Airmen
NTZ	No Transgression Zone
OPS	Operations
OT&E	Operational Test and Evaluation
PAT&E	Production Test and Evaluation
PC	Personal Computer
PDSR	Program Director Status Review
PIP	Project Implementation Plan
PM	Program Manager
PMP	Project Master Plan
PPL	Provisioning Parts List
PRD	Program Requirements Document
PRM	Precision Runway Monitor
PRR	Procurement Readiness Review
PSD	PRM Status Display
PSF	Program Support Facility
QA	Quality Assurance
QRO	Quality Reliability Officer
QVM	Quality Verification Matrix
R&D	Research and Development
RAPM	Regional Associate Program Manager
RAPMEA	Regional Associate Program Manager for Eastern Region
RAPM	Regional Associate Program Manager for Great Lakes Region
RAPMSO	Regional Associate Program Manager for Southern Region
RDS	Radar Display Subsystem
RDU	Raleigh-Durham International Airport
RE&D	Research, Engineering, and Development
RF	Radio/Frequency

RMA	Reliability, Maintainability, and Availability
RMS	Remote Monitoring System
RMMS	Remote Maintenance Monitoring System
RPMS	Regional Project Management System
RPS	Record and Playback Subsystem
SEB	Source Evaluation Board
SEIC	Systems Engineering and Integration Contractor
SOW	Statement of Work
SPIR	Site Preparation Installation Report
T/R	Transmitter/Receiver
T&E	Test and Evaluation
TD	Test Director
TERPS	Terminal Instrument Procedures
TIM	Technical Interchange Meeting
TO	Technical Officer
TOR	Technical Onsite Representative
TRACON	Terminal Radar Approach Control
UPS	Uninterruptible Power System
VNTSC	Volpe National Transportation Systems Center

APPENDIX 2. PRM LIMITED PRODUCTION INSTALLATION SITES

DELIVERY	SITE ID	SITE NAME	STATE	REGION	DELIVERY DATE
1	MSP	Minneapolis-St. Paul International Airport	MN	AGL	October 1994
2	RDU	Raleigh-Durham International Airport	NC	ASO	1995
3	ATL	Atlanta-Hartsfield International Airport	GA	ASO	1995
4	JFK	John F. Kennedy International Airport	NY	AEA	1995
5	PHL	Philadelphia International Airport	PA	AEA	1996

APPENDIX 3. PRM PROJECT CONTACT LIST

TITLE	OFFICE	INDIVIDUAL	TELEPHONE	FAX
PM	ANR-300	Byron Johnson	202-606-4644	202-606-4286
APME/TO	ANR-700	Wayne Sutler	202-606-4630	202-606-4625
APMC	ASU-320	C. Steve Brown	202-606-4516	202-606-4269
CONTRACTS	ASU-320	Sarah McLaurin	202-606-4523	202-606-4269
APMSE	ASE-300	Doug Hodgkins	202-287-8633	202-287-8661
APMT	ACW-100A	Jeff Livings	609-484-5342	609-484-5995
APML	ANS-430	Chuck Gould	202-267-3154	202-267-5613
APMQ	ASU-423	Bob Greer	410-583-4108	410-337-7485
APML	AGC-510	George Kinsey	202-267-7368	202-267-7257
APMRD	ARD-100	Gene Wong	202-267-3475	202-267-5418
APMSC	ASC-201	Ralph Dority	202-267-7906	202-267-5767
APMR	ATR-120	Victor Smith	202-267-8428	202-267-5756
APMP	ATP-122	Brenda Mileski	202-267-8794	202-267-5120
APMAS	ATZ-110	Les Jones	202-366-1300	202-366-7620
APMFS	AFS-405	D. Spyder Thomas	202-267-3726	202-267-5086
APMPO	APO-220	Lawrence Barry	202-267-3305	202-267-3324
RAPMSO	ASO-422	Glenn Beaupre	404-763-7371	404-763-7652
RAPMGL	AGL-421	Orlando Alers	312-694-7584	312-694-7545
RAPMEA	AEA-451.1	Mark Miglietta	718-553-1198	718-553-1911

APPENDIX 4. PRM TECHNICAL SUPPORT

1. PURPOSE. This appendix identifies contractor organizations providing PRM program, technical, and administrative support.

a. MSI and Allied-Signal/Bendix Corporations are jointly responsible for the development, manufacture, installation, and testing of the Upgrade PRM system.

b. Allied-Signal/Bendix Corporation is responsible for the development, manufacture, installation, and testing of the Limited Production PRM systems.

c. Volpe National Transportation Systems Center (VNTSC) provides technical and programmatic support to the PRM Programs.

P6690.06

9/13/94

Enhanced Terminal Voice Switch (ETVS)

Project Implementation Plan (PIP)

U. S. Department of Transportation

Federal Aviation Administration

bution: A-W (NC/SE/LM/TR) - 3; A-Z (LOS) - 3; A-Y (DE/AY) - 3; A-FAF-7 (LTD); A-FAT-2/8 (LTD) Initiated by ANC-200